

Chapter 10:
Perspectives from Tangata Whenua: considering
impacts of emissions reductions and removals for
Iwi/Māori.

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Emissions reduction options and associated impacts for Iwi and Māori will vary across the motu. Supporting the Crown to be a good Treaty partner and promoting intergenerationally equitable outcomes for Iwi/Māori requires an understanding of the issues and opportunities through a te ao Māori lens, from the perspectives of tangata whenua.

This chapter draws on He Ara Waiora – A Pathway towards Wellbeing and insights gathered through engagement with Māori to explore potential impacts for Iwi/Māori of different emissions reduction options.

We saw many examples where Iwi/Māori demonstrate climate positive leadership in their decision making by exercising rangatiratanga and kaitiakitanga and identify key considerations that Aotearoa should factor into climate positive decisions and actions.

10.1 Introduction

Under the Climate Change Response Act 2002 (CCRA), the Commission must consider the Crown-Māori relationship, te ao Māori, and specific effects on Iwi and Māori in our advice (section 5M(f)). When acting on our advice, the Government is required to include strategies to recognise and mitigate the impacts on Iwi and Māori of reducing emissions and increasing removals of carbon from the atmosphere (section 3A(ad)). This includes considering the economic, social, health, environmental, ecological, and cultural effects of climate change for Iwi and Māori.

Recognising relevant reduction options and potential impacts requires an understanding of what matters to Iwi and Māori from a Māori perspective, or a te ao Māori view. This chapter sets out our key findings and insights that enable the development of an appropriate strategy to meet our legislative obligations.

Te ao Māori view is a distinct way of understanding and being in the world unique to tangata whenua of Aotearoa. Within te ao Māori, societal constructs are comprised of Iwi, hapū and whānau who occupy different takiwā (tribal regions). Between Iwi, hapū and their respective takiwā, expressions of tikanga and mātauranga are diverse and there is also dialectal variation within te reo Māori.

Given the diversity across Iwi/Māori, we understand that Iwi/Māori across the motu will be affected differently due to their unique histories and the characteristics of their tribal takiwā. Our approach to gathering insights included building an understanding of the historic and contemporary context to frame what we heard.

10.1.1 Purpose

While impacts for Iwi and Māori are considered throughout the report, the purpose of this chapter is to provide an overview of the insights we gathered from tangata whenua. This was achieved through engagement, literature and consultation feedback, to provide the appropriate context, supporting evidence and the rationale underpinning our impacts analysis specific to Iwi and Māori.

This chapter is intended to set the foundations of our work to understand impacts for Iwi and Māori, to enable Iwi and Māori to test our understanding and analysis of impacts and provide feedback. While this section is written to ensure Iwi and Māori are able to participate in the process in a focused and efficient way, we hope that the content may be useful to other audiences.

10.1.2 How we engaged with Iwi/Māori and gathered insights

Climate change emissions reduction options and associated impacts for Iwi and Māori will vary across the motu. As an indication of diversity across Iwi and Māori, there are over 90 recognised Iwi in census data. Each has affiliated hapū and associated marae. Of the larger Iwi Ngā Puhī has 110 affiliated hapū, Ngāti Porou has 58 affiliated hapū, Ngāi Tahu have 5 primary hapū (although there were over 100 hapū pre-settlement), Waikato-Tainui have 33 affiliated hapū and Ngāti Tūwharetoa have 26 affiliated hapū. There are also 8,406¹ entities managing 27,456 Māori freehold land titles and several pan-Iwi and pan-Māori organisations.

Considering the vastness of Iwi and Māori perspectives within Aotearoa, we acknowledge we are not able to represent perspectives on behalf of all Māori. However, in addition to hui held in the consultation period and submissions feedback, including our 100CoastieVoices online survey campaign, we applied a range of methods to reach out and connect with Iwi and Māori between February and October 2020. Our approach to gather a broad range of insights for our Draft Advice to 2021 Draft Advice for Consultation included:

1. Building on the insights gathered through the Interim Climate Change Committee's submissions process and their engagement with Iwi and Māori.
2. Undertaking an assessment of Iwi Management Plans to understand aspirations for resources within their takiwā.
3. Undertaking a review of literature pertaining to Māori perspectives on climate change and/or protecting te ao tūroa/te taiao.
4. Drawing on He Ara Waiora², a high-level Māori wellbeing framework sourced in mātauranga Māori. This approach enabled us to draw on insights Māori thought leaders have already provided to the Crown while trying not to exacerbate engagement fatigue.
5. Ensuring Māori with the relevant expertise were members of the Technical Reference Groups.
6. Conducting Zoom sessions with Māori thought leaders, representatives, Māori business leaders, Iwi and Māori scientists.

Engaging with Māori who connected with us.

7. Initiated case studies with representatives of Māori-collectives.³

¹ (Māori Land Court, 2020)

² (McMeeking et al., 2019)

³ We invited Māori-collectives from different takiwā to participate in case studies, however, only a small number of entities were able or willing to engage. Reasons for not engaging included timing/capacity

The insights we heard through engagement with Iwi/Māori inform this chapter and are summarised in Part 2 under barriers, opportunities/benefits and key considerations in alignment with the Te Tiriti o Waitangi/The Treaty of Waitangi (the Treaty) principles. Going forward we will expand our engagement with Iwi/Māori to ensure we are understanding Māori perspectives more broadly across the motu.

This chapter is comprised of two parts:

- **Part 1: Context** – this part contains foundational context, which provides the basis of our analysis for impacts on Iwi and Māori to support the development of our Advice and set up a base level of knowledge for our work going forward.
- **Part 2: Impacts** – this part identifies potential impacts for Iwi and Māori based on our findings in relation to the context and the sector reduction options and pathways.

Further work will be undertaken to address impacts for Iwi and Māori with regard to adaptation, however, the focus of our work to date has been to capture the potential impacts for Iwi and Māori of proposed options to reduce and remove emissions.

10.2 Part 1: Context

10.2.1 Iwi and Māori constructs

Impacts on Iwi and Māori can only be understood through a te ao Māori view within the context of traditional and contemporary Māori societal and economic frameworks.

Traditional Māori societal frameworks consisted of whānau and hapū and connected through whakapapa to a common ancestor and an area/territory (e.g., maunga, awa, moana, whenua) based on rights established by their tipuna.

Today, following years of colonial disruption, in addition to traditional societal frameworks, Iwi, hapū and whānau Māori maintain aspects of their cultural, social, environmental and economic functions through a range of organisational constructs. For the purposes of this report, we have referred to all Māori traditional and contemporary constructs where members are connected through whakapapa as **Māori-collectives**. We refer to pan-Iwi or pan-Māori organisations by their names. Where we use the phrase ‘Iwi and Māori’ throughout the report this is specifically referring to and aligning with the CCRA and ‘Iwi/Māori’ when we are speaking more generally given that culturally Māori as individuals, whānau and hapū are components of Iwi.

10.2.2 Māori-collectives

For the purposes of this chapter, Māori-collectives include:

- **Iwi** – tribe or extended kinship group comprised of several hapū within a takiwā (tribal boundary). Iwi is largely recognized by the Crown due to the large natural grouping policy, prioritised under the Treaty settlement process. Today, Iwi operate through a

constraints, no perceived reciprocation of value, lack of trust in the Crown’s desire to do right by Māori, or potential misrepresentation or lack of capability to understand and relay the information appropriately.

range of entities including Post-Settlement Governance Entities (PSGEs), charitable trusts, companies or partnerships to undertake their duties and carry out operations.

- **Māori Trust Boards** – some Iwi/Māori entities are constituted under the Māori Trust Boards Act 1955. This legal framework was initially established to enable Iwi to manage compensation payments (prior to PSGEs). They typically hold collectively-owned tribal assets and their main objectives are political, social and cultural. Being a Crown construct there are ongoing tensions due to Crown control versus Iwi/Māori autonomy.
- **PSGEs** – are typically Iwi entities set up to receive and sometimes administer and manage redress assets on behalf of their members. Due to the government’s large natural grouping policy, PSGEs are often tasked with transferring redress assets back to the hapū/collective of hapū with the mana whenua status.
- **Hapū** – Kinship group or subtribe (subgroups referred to as hapori). Some of the participants we engaged with considered their perspectives on climate change from a whānau and hapū perspective, with regard to how they could experience impacts. Note: whānau form the base unit of Māori societal constructs, however, we have not focused on whānau in this chapter, as many of the impacts for Māori as individuals and whānau will be covered in other chapters.
- **Marae** – usually run by a board or committee and typically represent the centre for culture for whānau and hapū where cultural practices such as tangihanga, wānanga, hui-a-hapū are upheld.
- **Te Ture Whenua Māori Entities** – entities created under the Te Ture Whenua Māori Act 1993 to hold and manage Māori customary or freehold land. A large number of Māori entities operating in forestry and farming are Ahu Whenua Trusts and Māori Incorporations.

10.2.3 Traditional Māori social and economic structures

Kainga/Pā

Traditionally the kāinga was the base economic unit of Māori society. The kāinga (also referred to as the Pā) was home to several whānau within a hapū, and comprised of a small number of whare and sometimes a marae. It had proximity to areas suitable for gathering food, rongoā and other resources essential for carrying out subsistence or customary practices within the established hapū boundaries. Within the kāinga, tikanga such as aroha, manaakitanga, utu and koha ensured the wellbeing of the resident whānau and supported intra-hapū and pan-Iwi trading of resources.

Haukāinga

The haukāinga (home people/whānau from the Pā), sometimes referred to as the ahi kā, provide a significant contribution to the sustainability and vitality of Māori culture. This is due to their role in carrying on the kawa and tikanga of their marae, kāinga and hapū, as well as retaining local mātauranga and managing stocks of natural resources.

In addition to upholding culture, the haukāinga also help maintain cohesive and resilient communities. Māori we engaged with, who were raised on the Pā and/or are active members of their haukāinga, described the Pā lifestyle as having a high degree of community connectivity a strong sense of self-identity, and belonging which enhanced resilience within their communities.

We were told that the high level of connectedness within the haukāinga enhanced community resilience during the COVID-19 lockdown period. Similarly, climate change initiatives should consider the role and effectiveness of the haukāinga (or ahi kā) for their ability to build community cohesion and resilience particularly in times of crisis. Participants discussed how Māori communities are often viewed by the Crown from a deficit perspective. However, following COVID-19 lockdown, these communities demonstrated their strength and prosperity in ways that should not be discounted when considering actions to address climate change.

Whānau

Whānau encapsulates the extended family or family group and (within the kāinga) represents a key component of the primary economic unit of traditional Māori society. Within Māori social constructs, wellbeing can be enhanced with initiatives driven from within the whānau unit.

Hapū

Hapū is a larger kinship group consisting of several whānau who share a common ancestry. Hapū traditionally form the primary political unit, exercising rangatiratanga, mana motuhake, kaitiakitanga, ahi kā and other cultural related practices where they have mana whenua within their takiwā. While whānau form the base unit of Māori social constructs, whānau will collaborate as hapū to take on shared kaupapa that requires collective action.

Iwi

Iwi is an extended kinship group who share a common ancestor with established tribal boundaries or takiwā. Similar to whānau collectivising as hapū, hapū typically align as Iwi to take on shared kaupapa and often Iwi will work in collaboration with other Iwi. In contemporary times, Iwi is not just a genealogy-based construct, but has taken on a constitutional role subsequent to the Treaty settlement process. Now, through settlement legislation, the Crown must uphold obligations specific to individual Iwi, which climate change policy would need to give consideration to.

10.2.4 Te ao Māori values

Throughout engagement we heard from a range of Māori individuals and representatives from Māori-collectives who expressed how Māori concepts of whakapapa, whenua, whanaungatanga, tikanga such as kaitiakitanga, manaakitanga, kotahitanga, rangatiratanga and mana motuhake shape the way Māori live as tangata whenua in Aotearoa and how these values contribute to decision making.

We also heard that mātauranga Māori and tikanga vary across Iwi/hapū and different regions. However, at a high level there are consistent themes that resonate broadly with Iwi/Māori, which have guided a Māori way of being in the world for many generations (e.g., societal frameworks, community responsibilities, resource management).

There was not sufficient time to take soundings across a broad spectrum of Māori-collectives. However, based on these common themes, we have drawn on the framework He Ara Waiora – A Pathway towards Wellbeing (version 2)⁴ to inform our understanding of a te ao Māori view and underpin our analysis regarding impacts for Iwi/Māori. He Ara Waiora⁵ presents a mātauranga Māori approach to wellbeing and provides appropriate framing to assess impacts of emissions reductions and increased removals for Iwi and Māori.

10.2.5 He Ara Waiora – A pathway towards wellbeing

He Ara Waiora aims to provide a potential “*model for measuring and analysing wellbeing, sourced in mātauranga Māori.*”⁶ It is a useful framework to apply our analysis as it provides a high-level interpretation of how Māori view the world holistically, which is consistent with the perspectives we heard through engagement with Māori. He Ara Waiora also helps us think about how tikanga could be applied to our advice on climate change policy, which should consider the broader wellbeing of people and the environment for current and future generations.

Through engagement with Māori we heard that all things are interconnected through wairua and whakapapa. Through whakapapa, Māori acknowledge their relationship to the environment (being the descendants of Io and of Ranginui and Papatūānuku). The ira tangata (the human realm) positions humans as the pōtiki (the youngest) in the whakapapa, therefore Māori inherit responsibilities to the other domains (e.g., Ranginui and Papatūānuku, Tangaroa - the sea, Tāne Mahuta – the forest and Tāne’s offspring the flora/fauna etc.) who preceded the emergence of humanity into Te Ao Marama (the light of the world/the world of knowledge).

Accordingly, through whakapapa, Māori inherit responsibilities to consider the wellbeing of the broader system and tikanga provides guidelines that enable a holistic way of living. An understanding of a te ao Māori view and how tikanga is applied could extend to the way we consider climate change related decisions.

This relationality is presented in the He Ara Waiora framework (*Figure 10.1*) which is anchored in wairua as a source of wellbeing. The taiao at the centre (incorporating the ira atua: Ranginui, Papatūānuku, Tāne mahuta, Tangaroa etc.) iterates a Māori perspective that environmental wellbeing is a precursor to human wellbeing and wellbeing within the ira tangata (the human realm) is premised on an interdependence between individual and collective wellbeing. Māori who contributed to the development of the framework identified four dimensions of wellbeing within the ira tangata which include:

- Mana tuku iho – Identity and belonging
- Mana tauutuutu – Individual and community rights and responsibilities

⁴(McMeeking et al., 2019)

⁵ He Ara Waiora was initiated by the Tax Working Group, co-designed with Māori thought leaders and Iwi representatives and is currently under the stewardship of the Treasury.

⁶ (McMeeking et al., 2019, p. 5)

- Mana āheinga – Aspiration and capability
- Mana whanake – Sustainable prosperity



Figure 10.1 He Ara Waiora Framework Version 2.0⁷

We heard through engagement that many cultural and commercial Māori-collectives operate in accordance with the tikanga values that are relevant to them. Within the He Ara Waiora framework, tikanga is considered as a ‘means’ which combined with the ‘ends’ can achieve waiora or wellbeing. This was consistent with how Māori described the way tikanga applies to decision-making on their whenua. For example, through applying values of kaitiaki, Ōpepe Farm Trust had already reduced their nitrate discharge output before the Lake Taupō nitrate discharge allowance (NDA) grandparenting rules⁸ were introduced (which then penalized them for being early movers and doing good).

Māori we engaged with often talked about their kaitiaki obligations to their whenua. Comparatively, the Commission serves in more of a tiaki capacity. As Aotearoa transitions to a thriving, climate-resilient low emissions Aotearoa, the Commission can identify with the stewardship aspects of our respective responsibilities.

He Ara Waiora indicates tikanga values that have high-frequency use within Māori organisations and were considered appropriate as a ‘means’ to achieving wellbeing. The most commonly applied tikanga by Māori organisations included kaitiakitanga, manaakitanga, tikanga, whanaungatanga and kotahitanga. Drawing on these tikanga, we have adopted their application to help interpret the

⁷ (McMeeking et al., 2019, p. 69)

⁸ (Duhon et al., 2015)

insights we gained through engagement and to consider potential impacts on Iwi/Māori communities. From a tiakitanga perspective we will apply the tikanga as follows:

1. **Manaakitanga** – having a deep ethic of care towards people and whenua, acknowledging their role in the eco-system and how they could be impacted through this work.
2. **Tikanga** – ensuring the right decision makers are involved in the process and the right decision-making process is implemented.
3. **Whanaungatanga**⁹ – being mindful of the relationality between all things, our connections to each other and how we connect to our whenua.
4. **Kotahitanga** – taking an inclusive approach and working collaboratively with other agencies/organisations, communities and people, to access the best ideas and information while uplifting our collective efforts to transition to a low emissions Aotearoa.

While the Māori-collectives we engaged with identified as actively operating in accordance with their cultural values, some Māori who engaged with us from an individual perspective commented that there are Māori-collectives which do not operate in accordance with Māori cultural values. For the purposes of our work we have simply reflected the views of participants.¹⁰ Our engagement process also included individuals, whose views are reflected in this report.

In addition to the tikanga reflected in He Ara Waiora, rangatiratanga, as guaranteed under the Treaty, was another key focus throughout engagement for Māori.

10.2.6 The Māori economy

The Māori economy is a key aspect of Māori development and intergenerational sustainability and prosperity. It is also a contributor to emissions outputs and an enabler for emissions reductions and removals. For the purposes of this report, we focus on the participation of Māori-collectives within the Māori economy due to the nexus with whakapapa and whenua. Māori-collectives are defined at 10.2.1 with examples at 10.2.2.

Māori economic development tends to have a long-term outlook and is typically progressed alongside Māori cultural, social and environmental development strategies as a holistic approach to intergenerational wellbeing.

In the early nineteenth century, Māori were progressive business owners and entrepreneurs, quickly adapting to new technologies and trading a range of products domestically and internationally

⁹ He Ara Waiora development discussions did not fully explore the application of whanaungatanga to policy. We have summarised this tikanga based on what we heard through engagement.

¹⁰ Our view is that the self-determined application of cultural values is subjective and unique to the practitioner. A Māori-collective's context, history and level of resourcing contributes to its activities and opportunities and individual perspectives vary according to knowledge, exposure and/or experience. It is not our role to define cultural drivers, so we have simply reflected the views of participants.

(initially around Australia and the Pacific).¹¹ Early Māori business models were fully integrated along the value chain and Iwi and Māori operated with autonomy.

Māori commercial activity has always been a key enabler for the sustained physical, mental and spiritual wellbeing of the people. *“The mana of a rangatira, and associated whānau, hapū and, iwi was measured by the ability of the group to produce, manage and profit from resources in a way that ensured the wellbeing, health, and prosperity of all.”*¹² Accordingly, protecting and building the resource base was a central tenet of Māori economic development.

The unjust acquisition and confiscation of Māori land, restrictive land management legislation, intervention by Crown officials or Crown appointed Trustees, and a significantly reduced population due to introduced diseases left Māori alienated and disenfranchised. By the mid-twentieth century, land that remained in Māori ownership was typically unproductive or the original owners had lost control (e.g., locked into perpetual leases or under management). Many Māori, unable to continue traditional subsistence lifestyles, migrated from their tūrangawaewae (place of belonging), leaving their communities and cultural base for unskilled or semi-skilled employment in urban centres.

In recent decades, we have seen a resurgence in Māori economic development. In the last 30-50 years, partly due to the Treaty settlement process, the expiry of some perpetual leases and legislative review, Māori-collectives have been able to reassert their mana motuhake and direct the use of their cultural and collectively-owned assets for economic progression.

Released in 2021, the BERL report ‘Te Ōhanga Māori 2018: The Māori Economy 2018’ values the Māori asset base at \$69 billion of which \$24 billion is in agriculture, forestry and fishing, 60% of this is held by Māori-collectives.¹³ Other asset classes include property, private equity, financial assets, tourism, geothermal, technology and innovation.¹⁴ Driven by cultural values, some Māori-collectives are already identifying and/or moving into innovative low emissions industries (e.g., hemp, medicinal cannabis and koura, or investing in technology to drive innovations in nutraceuticals, fashion and tourism).

The Māori economy is like a developing economy within a developed economy and is fast growing. Value added (GDP) by Māori enterprises in total grew 9.2% between 2013 and 2018, compared to 6% in non-Māori enterprises. It is *“expected that Māori will invest approximately NZ\$1.5-\$2 billion annually over the next 10 to 15 years.”*¹⁵ This model of integrated and sustainable growth makes Māori-collectives well placed to demonstrate an alternative model of leadership as Aotearoa looks to progress emissions reducing initiatives.

¹¹ (Ministry of Education & Te Kete Ipurangi, 2016)

¹² (Ministry of Education & Te Kete Ipurangi, 2016)

¹³ (BERL, 2021)

¹⁴ (TBD Advisory, 2019)

¹⁵ (NZTE, 2017)

10.2.7 The Māori emissions profile

In discussions with Māori representatives on Ahu Whenua Trusts, we learnt that a range of incentives/disincentives lead Māori to make climate positive choices on their land (e.g., values of kaitiakitanga and a desire to do good for the taiao, regulations and compliance costs, a desire to support our country's contribution to the Paris Agreement).

However, a clear theme that emerged was the view that a disproportionate amount of Māori ancestral land has been retained by the Crown and reserved for conservation that, as a carbon sink or reservoir, contributes to our country's emissions baseline.

A significant amount of collectively-owned Māori land is locked up in production forestry for example, Central North Island Forest, Lake Taupō Forest Trust, Lake Rotoaira Forest Trust (in part due to settlement redress). Some Māori land trusts supply geothermal energy and culturally significant lakes and rivers contribute to the production of hydro energy. In addition, some Māori-collectives have historically opted not to develop land (e.g., conversions to farming or production forestry, housing, food production) where it could conflict with kaitiaki values and compromise the preservation of indigenous biodiversity or cultural practices.

On this basis, it was viewed that collectively Māori have already contributed significantly to the country's emissions reductions, either through carbon sequestration, culturally significant lakes and rivers being utilised to produce renewable energy or the opportunity cost of not converting and developing natural environments. This raised the question of how our country's emissions budgets and efforts to reduce emissions would be equitable without a clear understanding of the current state of a Māori emissions profile.

It was suggested by representatives of Māori Land Trusts that a Māori emissions baseline was key to ensuring equity and upholding the Treaty principles of partnership, participation and protection for Iwi/Māori as we progress emissions reduction objectives in Aotearoa. A Māori emissions baseline would also indicate carbon risk exposure for Māori-collectives and help identify potential impacts on Māori cultural prosperity and Iwi and Māori economic development.

A Māori emissions profile would enable Māori-collectives to manage emissions collaboratively across their takiwā. This is consistent with balancing traditional concepts of rangatiratanga and traditional practices i.e., resource preservation and management alongside the cultural, social and economic wellbeing of Iwi, hapū and whānau.

Through our research, we have identified a crude attempt at developing a Māori emissions profile could be achieved by Crown agencies to include data on stocking rates, plantation site coverage data and Iwi takiwā boundaries. Agencies such as Ministry for the Environment, Ministry for Primary Industries, Manaaki Whenua, Te Tumu Paeroa and possibly other Crown Research Institutes, and local government could work collaboratively to improve the capability of Te Puni Kōkiri's Tōku Whenua platform *tupu.nz*.¹⁶ Alternatively, the Crown and local government could fund Māori-

¹⁶tupu.nz is a platform supporting whānau aspirations for Māori freehold land – to grow whānau through whenua.

collectives to establish a platform to determine their own emissions profile within their respective takiwā.

We heard through consultation that Iwi/Māori strongly support the development of a Māori emissions profile. However, while Government should support this project with sufficient funding and resourcing, it should be led by Iwi and the Māori-collectives within respective takiwā, to promote rangatiratanga/autonomy, the inclusion of mātauranga and protect indigenous data sovereignty and local mātauranga.

10.3 Part 2: Impacts

10.3.1 Overview

Prior to the 1840s, all land in Aotearoa was Māori land. Māori established territorial rights over land through customary law concepts such as whakapapa, tino rangatiratanga, mana motuhake, mana whenua, taonga tuku iho and ahi kā. Māori ways of living acknowledged existing relationships and interconnections, emphasising integration within an ecosystem.¹⁷

Since the 1840s, colonial action has dispossessed Māori of their whenua, diminished rangatiratanga and the ability for Iwi, hapū and whānau to live in accordance with their traditional values. The Native Schools Act 1867 suppressed te reo Māori and had a devastating intergenerational effect. The Tohunga Suppression Act 1907 served to address some issues at the time, but also contributed to the loss of traditional medicinal knowledge.¹⁸ From the 1930s,¹⁹ Māori communities were relocated from their Pā/kāinga and many eventually relocated to urban centres.

The culmination of historic events have fragmented and disrupted Māori social, cultural and economic practices and today many Māori experience compounded disadvantage and inequity. Māori often feature in low-sociodemographic data for health, employment and education, experience substandard housing, lower home ownership and lower household income.

The Māori population is expected to expand over the next 20 years from about 776,000 now, to approximately 1-1.16 million. In 20 years, Māori could account for almost 20% of the total national projected population and one third of all children.^{20,21}

It is important to acknowledge our history so that climate change policies promote intergenerational equity. To avoid compounding historic grievances for Iwi and Māori, strategies to reduce emissions and increase removals should incorporate a deep understanding of te ao Māori and of the relevant historic and contemporary context.

Simultaneously, it is important that climate change policy is not limited by focusing on a deficit narrative, as outcomes for Māori have been improving over the past few decades, partly due to the Treaty settlements process.

Māori communities have demonstrated significant resilience and cohesion in times of crisis and in many instances, including the Canterbury earthquakes and COVID-19, are well positioned to respond. Therefore, they contain examples of leadership and organisation that could help inform climate change policy. There are also a number of Māori-collectives driving innovation to lower emissions by transitioning operations, for example, moving from dairy to sheep's milk or increasing

¹⁷ (Ministry of Education & Te Kete Ipurangi, 2016)

¹⁸ (Waitangi Tribunal, 2011)

¹⁹ (Derby, 2011)

²⁰ (Te Puni Kōkiri, 2017)

²¹ (Stats NZ, 2019)

profitability by complementing farming and forestry with diversified uses such as manuka honey and ginseng.

Throughout part 2 we examine the reductions and removals options set out in *Chapter 4: Reducing emissions - opportunities and challenges across sectors* and *Chapter 9: Removing carbon from our atmosphere* to identify barriers or other impacts for Iwi and Māori. We explore considerations which would inform a strategy to reduce these impacts through the Treaty principles of partnership, participation and protection. Key considerations aligned with the He Ara Waiora framework are also summarised at the end of this section.

10.3.2 Land use

Traditionally within a te ao Māori view, occupation awarded hapū authority over an area and the right to carry out cultural, social and economic activity within that takiwā. This included a relationship with and the use of the whenua and associated resources. Occupation also incurred obligations and responsibilities to protect, nurture and preserve life and the ecosystem for current and future generations. Exercising these obligations and responsibilities is rangatiratanga, and these duties are captured in tikanga, whakapapa, mātauranga and other cultural knowledge and practices.

Māori identify their connection to hapū and whenua (translated as both ‘land’ and ‘umbilical cord’) through whakapapa and it is through whakapapa that practices and obligations such as taonga tuku iho and kaitiakitanga are bestowed.²² There is an increasing trend among organisations to incorporate ‘systems thinking’ in their strategies and decision making. In te ao Māori this is referred to as whakapapa, an ancient knowledge system passed down over generations that has provided a blueprint for Māori to always be aware of the connectivity between all things.

After signing the Treaty in 1840, the Crown aggressively sought to obtain Māori land. This was achieved through two methods in particular, acquisition and raupatu (confiscation)²³ So that by 1862, the Crown had acquired approximately two-thirds of all land in Aotearoa. Subsequent legislation enabled the Crown to further acquire Māori land for settlement and together, these methods effectively dispossessed Māori of most of their ancestral lands.²⁴ Today all that remains of Māori ancestral land (still owned by the descendants of the original owners) is approximately 1.4 million hectares (approximately 5% of Aotearoa).²⁵

With the land acquired from Māori, British settler society sought to replicate the lifestyles of their homeland, draining wetlands and converting landscapes to fit within the British farming models they

²² (McMeeking et al., 2019)

²³ The New Zealand Settlement Act 1863 allowed for the confiscation (raupatu) of land without compensation. (Audit Office, 2004)

²⁴ The Public Works Act 1928, Maori Reserve Lands Act 1955 and the Reserves Act 1977 allowed the Crown to further alienate and displace Māori from their ancestral lands. The Māori Affairs Amendment Act 1967 introduced compulsory conversion of Māori freehold land with four or fewer owners into general land, making it easier to acquire, for example, when rates were in arrears (often owners did not know rates were accruing) or surveying costs could not be met. It also increased the powers of the Māori trustee to compulsorily acquire and sell so-called uneconomic interests in Māori land.

²⁵ (Māori Land Court, 2020)

were accustomed to.²⁶ This has led to Aotearoa being highly dependent economically on the historic conversions of natural landscapes to highly productive farmland. As a consequence, our current distribution of land use is a key contributor to our country's greenhouse gas emissions. This, combined with the mass clearing of indigenous forests, by Māori and Pākehā, (reducing total forest cover over time from 80% pre-human settlement to approximately 23% by 2000),²⁷ draining of wetlands and loss of associated indigenous biodiversity, has led to an imbalance in our management of greenhouse gas emissions.²⁸

Of the remaining 1.4 million hectares still in customary ownership (Māori freehold land title), land blocks are highly fragmented with 27,500 land titles.²⁹ Of these land titles, 42% (representing 83% of land mass) have some form of governance structure with 8,467 governance structures in total. A large percentage of Māori freehold land is located in Māori Land Court regions Aotea (~29%), Waiariki (~22%) and Tairāwhiti (~19%).³⁰

Based on CoreLogic data, 60% of this land is considered marginal land (land use capabilities of six, seven or eight). Approximately 18% of this land is used for forestry and 19% is used for livestock (i.e. sheep and beef). This is consistent with research that has estimated that the majority of Māori land is in the marginal land classes.³¹ This is non-arable land that has limited productive use or requires significant investment to be used productively for example, for agriculture or horticulture. This research also found that up to 30% of Māori land could be landlocked,³² preventing this land from being accessed and used.

Māori freehold land governance structures are provided for under the Te Ture Whenua Māori Act 1993. The most common structures are Ahu Whenua Trusts and Iwi and Māori Incorporations. Governed land blocks have an average size of 100 hectares and an average of 213 owners.³³ Due to issues regarding succession, legislative constraints, diverse governance and management capability, access to capital and challenges identifying owners, progressing initiatives on many Māori freehold land blocks can pose a significant barrier to development.

In addition to Māori freehold land titles, Māori-collectives also own general title land such as redress land or Tenths Reserves.

²⁶ (McLeod et al., 2006)

²⁷ (McSaveney, 2015)

²⁸ (Dawson, 2007)

²⁹ (Māori Land Court, 2020)

³⁰ (Māori Land Court, 2020)

³¹ (Audit Office, 2004)

³² A statutory definition of landlocked land is provided within s 326A of Te Ture Whenua Māori Act 1993. The land must be Māori freehold land or general land owned by Māori with 'no reasonable access to it'

³³(Māori Land Court, 2020)

10.3.4 Forestry

Background

Crown acquisition prioritised high quality land or strategic locations. Land retained by Māori was generally of lower quality but suitable for forestry. Some Iwi retained areas of native forestry and through Treaty settlements some Iwi have had forestry and/or forest land returned through redress. A 2016 Agriculture Production Survey of Māori land (based on Māori authorities'³⁴ activity base) showed that areas of forest plantation on farmland, between 2006 and 2016, increased by 67.6% (from 65,864 hectares) and bush and scrub decreased by 32.5% (from 111,710 hectares).³⁵ In 2017, Ministry of Foreign Affairs and Trade data showed that Māori own approximately 40% of Forestry in Aotearoa.³⁶

Chapter 9: Removing carbon from our atmosphere indicates that a significant reduction in atmospheric carbon can be achieved through removals by either exotic or indigenous afforestation. While there are opportunities to encourage or incentivise afforestation on marginal and underutilised land across Aotearoa, it is not without its practical challenges, particularly where private landowners have other aspirations or face various challenges or barriers to transition land use.

Based on an analysis of Land Information data in 2019, the four largest privately owned land parcels in Aotearoa are foreign-owned forestry companies.³⁷ Meanwhile, the top 50 private land owners own just over one million hectares (~4% of total land) between them and range from 9,000 ha to 102,000 ha. Land parcels have an average size of 22,000 ha and median of 14,000 ha. Approximately 25% of privately owned land parcels were foreign-owned.³⁸

The five largest Māori-collective and pan-Iwi land holdings totalled approximately 630,000 hectares (Table 10.1).

Table 10.1. Landholding from the five largest Māori-collective/pan-Iwi holdings³⁹

Māori-collective/Pan-Iwi holdings	Landholding (ha)
Ngāi Tahu	243,495
CNI Holdings Limited	126,147
Ngāti Tūwharetoa	113,414
Ngāi Tahu	102,136
Proprietors of Mangatu Blocks	44,663
Total	629,855

³⁴ Certain Māori-collectives who meet Inland Revenue's eligibility criteria (e.g., Te Ture Whenua entities) can elect to have Māori Authority status for income tax purposes.

³⁵ (Stats NZ & Ministry for the Environment, 2018)

³⁶ (Ministry of Foreign Affairs and Trade, 2017)

³⁷ (Newton, 2019)

³⁸ (Newton, 2019)

³⁹ (Newton, 2019)

In addition to the Māori-collective/pan-Iwi holdings outlined in the article, the Māori Land Court data set indicates at least nine Māori freehold land management structures, which manage amalgamated land blocks of contiguous land or land blocks in close proximity of over 14,000 ha in size, with a collective value of 253,000 ha.⁴⁰ The size of land holdings do not indicate availability of land for afforestation. It is merely an indication of effort versus potential required to implement afforestation strategies.

Barriers

Working in partnership with Iwi/Māori could increase afforestation in the short to medium term, on the basis that Māori-collectives own reasonably large areas of land with the potential for afforestation and provided there is an appetite from Māori-collectives.

Working with Māori-collectives would require acknowledgement of rangatiratanga, a deep understanding of whānau/hapū/Iwi aspirations for the whenua and an approach that upholds the Treaty and applies the tikanga set out in He Ara Waiora.

There are a range of known barriers to afforestation for Iwi and Māori. These would need to be addressed to ensure Iwi and Māori have equitable opportunities for increasing afforestation. Associated barriers and/or considerations for increasing afforestation on Māori land include:

- **Constraints and challenges associated with the management of collectively-owned Māori land under Te Ture Whenua Māori Act 1993.**⁴¹ While the Te Ture Whenua Māori (Succession, Dispute Resolution and Related Matters) Amendment Act 2020⁴² should go some way to ameliorate challenges for Māori landowners, there are still practical challenges for management structures to identify owners and achieve consensus on large issues.
- **Capital outlay – costs for conversion or development.** The cost of changing land use is high, particularly for Māori-collectives that may be asset rich but cash poor. Land conversion costs and other capital outlay expenses such as nursery stock, planting, pest control or wind protection can be a barrier to entry for Māori-collectives with low revenue streams or unproductive and/or under-utilised land. Economies of scale are also difficult to achieve in plantation forestry with smaller or fragmented land blocks. This occurs particularly where there is poor roading or landlocked land and would not be viable.
- **A short fall of capability and/or resourcing to uptake afforestation funding options.** This is particularly an issue on smaller land trusts where the level of resourcing (time, funding, staff) capability, or specialisation is not sufficient to complete funding applications, feasibility analysis or manage the implementation of projects.
- **Regular and/or adequate revenue streams to cover Council rates and other costs.** Some Māori-collectives with inherited commercial forestry combined with a low proportion of

⁴⁰ Data from Māori Land Court Māori Freehold Land dataset (Māori Land Court, 2020). The dataset includes collectives of management structures over neighbouring blocks with shared whakapapa.

⁴¹ (Te Ture Whenua Māori Act, 1993)

⁴² (Te Ture Whenua Māori (Succession, Dispute Resolution, and Related Matters) Amendment Act, 2020)

liquid assets and commitments to the New Zealand Emissions Trading Scheme (NZ ETS) are effectively locked in. On smaller land blocks commercial forestry does not return annual or regular revenue streams or other cultural and social co-benefits for owners, ongoing commitment to forestry may not align with their intergenerational aspirations. Insurance, forestry management and pest control also require regular cashflow streams.

- **Proximity to ports and roading infrastructure for viable commercial forestry.** Limited roading and rail infrastructure and proximity to ports can mean commercial forestry is not a viable option for Māori-collectives in remote areas wanting to participate in profitable forestry opportunities.
- **Access to nursery stock.** We heard from some Māori-collectives that they had faced challenges accessing nursery stock with the appropriate genetics to endure the local environmental conditions.

There are also negative impacts of forestry, particularly commercial forestry, for Māori-collectives. These include:

- The opportunity costs of utilising land for papakāinga development and maara/mahinga kai to meet the needs and aspirations of owners.
- The impact of harvesting on the environment, such as the negative impacts on waterways when exotic production forests are harvested through clear-fell. The overall impact over the full cycle (~28 years) is positive in terms of erosion prevention.⁴³

Opportunities

Some key opportunities associated with forestry, particularly indigenous forestry, for Māori-collectives include:

- Riparian planting, which can contribute to protecting water bodies from nitrate run-off and erosion.
- Potential to work with Māori-collectives who are already considering long-term strategies to replace exotics with natives; particularly species with longer growth cycles, for example, kauri, rātā, totara.
- Increased NZ ETS price could make afforestation a more viable option for Māori-collectives where previous barriers would have precluded afforestation as a land use option.
- Improved and increased hunting grounds to support the haukāinga/ahi kā and the marae (provided access is enabled and whānau are not locked off the whenua).
- Increased cover of indigenous forestry to support revitalisation and preservation of indigenous biodiversity, mahinga kai species and rongoā. Exotic afforestation also provides biodiversity benefits but not as great as indigenous forests.^{44,45}

⁴³ (Baillie & Neary, 2015)

⁴⁴ (Bremer & Farley, 2010)

⁴⁵ (Brockerhoff et al., 2008)

Alignment with Treaty Principles

Key considerations in alignment with the Treaty principles of partnership, participation and protection include (Table 10.2):

Table 10.2: Key considerations on forestry in alignment with Treaty principles

Requirement		Consideration
Partnership	1.	The Crown's approach to afforestation should take measures to emphasise rangatiratanga and collaboration through a genuine partnership with Iwi and Māori. Genuine partnership will ensure Iwi/Māori aspirations and the appropriate mātauranga are incorporated into afforestation solutions and opportunities
	2.	Māori-collectives with large land holdings should be considered for private/public investments which should incorporate kaitiaki and/or tikanga values and provide opportunities for Māori-collectives to participate in ownership further along the value chain.
	3.	Consideration should be given to how Māori-collectives could manage their emissions by takiwā in accordance with whakapapa and traditional kaitiaki management practices.
Participation	4.	Consideration should be given to investments that enable Māori-collectives to participate across the supply chain and support local economies. For example, jobs - we heard from participants who represented Trusts operating in forestry that traditional labouring jobs in forestry are being replaced with automation in modern day production.
	5.	Consideration should be given to ensure Māori-collectives are not further disadvantaged if transitioning land use for competing strategies such as food sovereignty and papakāinga development or when remaining Crown forest licenced land is returned through settlement.
	6.	Forestry is a key employment sector for Māori; consideration should be given to potential job losses/volatility due to increased automation and opportunities to upskill/transition into specialized wood products.
	7.	Consideration should be given to the unintended consequences of policies that incentivise afforestation and the opportunity cost of commercial forestry for some Māori-collectives.
	8.	Consideration should be given to the availability of access to Māori-collectives for training on the NZ ETS.
Protection	9.	Consideration should be given to climate change policy and associated regulations and how they should enhance the ability for Iwi and Māori to exercise rangatiratanga and kaitiakitanga within their takiwā.

Requirement	Consideration
10.	Consideration should be given to the need for flexibility in the NZ ETS to enable Māori-collectives to change land use where it could support other social, cultural, environmental or economic priorities for the intergenerational wellbeing of their members such as food sovereignty and papakāinga development. Being locked in to a particular land use does not enable the flexible management required for intergenerational organisations.
11.	Consideration should be given to mechanisms to incentivise increased afforestation and not constrain Māori-collectives from producing food. We heard that food sovereignty has become more of a focus post COVID-19.
12.	Consideration should be given to species diversification for example, natives (e.g., kānuka/mānuka for short term and by products, or long-term species such as kauri, tōtara and rātā), or exotics (e.g., pine, Douglas fir, beech, eucalyptus, etc.)
13.	Consideration should be given to deeper exploration of the mātauranga relating to the realm of Tāne Mahuta with respect to sustainability, biodiversity, rongoā and traditional practices.

10.3.5 Agriculture

Background

Māori-collectives operate in agriculture, with the output percentage of total production estimated at 30% in lamb production, 30% in sheep and beef production and 10% in dairy production.⁴⁶

According to a 2016 Agriculture Production Survey, 450,593 ha of Māori land (based on Māori authorities' activity base) identified as farms used for primary production. Nearly half the total was in grassland or pasture (217,933 ha), followed by forest plantation (110,393 ha), bush and scrub (75,351 ha) and horticulture (2,668 ha). Agriculture is estimated to account for around 1 in 5 Māori authority enterprises.⁴⁷ Livestock recorded in the survey included farmed beef and dairy cattle, sheep and deer.

Barriers

Māori-collectives and individuals we engaged with relayed diverse views on managing emissions from agriculture. Some Māori-collectives are already exploring regenerative farming models as a means of balancing their cultural, social, environmental and economic outcomes. Others are looking to transition out of dairy or farming altogether (noting these farms were not on highly productive land). However, for some Māori-collectives, the cost to transition would be too high, given the heavy investment they have already made to improve productivity. Individuals we talked to explained that farming had become a tradition which they were proud of and it provided economic returns. While there was an openness to plant up marginal and un-productive areas, practicality, resourcing and costs were raised as barriers.

⁴⁶ (Ministry of Foreign Affairs and Trade (MFAT), 2017)

⁴⁷ (Stats NZ & Ministry for the Environment, 2018)

In general, we heard from some Māori-collectives that they are actively developing strategies and making decisions in alignment with their tikanga values, particularly kaitiakitanga. Sometimes Māori-collectives are penalised for 'doing good' ahead of others⁴⁸ in their efforts to balance cultural, social, environmental and economic outcomes.

Approximately 60% of Māori freehold land has a Land Use Capability of 4-8.⁴⁹ This is not highly productive land and could explain the higher rates of Māori authorities operating in lamb, sheep and beef production (30%) compared to Māori authorities in dairy production (10%).

Some Māori-collectives, particularly in the case of Ahu Whenua Trusts, are not able to sell the land or make it available as collateral due to its status as taonga tuku iho and legislative constraints under Te Ture Whenua Māori Act (1993). Accordingly, these entities operate with a low debt to equity ratio and can have challenges raising equity, which presents barriers to transitioning land use and portfolio diversification or expansion.

Based on engagement discussions with Māori-collectives some of the barriers or considerations to changing behaviours and/or reducing emissions included:

- The introduction of new regulations should determine what Māori are already doing by way of better waste management and environmental protection practices. We heard from Māori-collectives who were already taking action to reduce nitrate runoff prior to the introduction of new legislation/regulations that they effectively had to 'pay twice' (e.g., NDAs).
- Often smaller Māori-collectives do not have the capability or capacity required to know what is out there, complete the application demands or keep up with changes in regulations.
- Farming provides a means for Māori-collectives to support their whānau, hapū and marae through the provision of kai for tangi and other cultural events. Consideration should be given to the need for flexibility in the NZ ETS to enable Māori-collectives to change land use where it could support other social, cultural, environmental or economic priorities for the intergenerational wellbeing of their members (e.g., food sovereignty and papakāinga development). Being locked into a particular land use does not enable the flexible management required for intergenerational organisations.
- There were concerns raised that more effort was needed to understand how technologies such as biogenic methane vaccines and inhibitors align with or contradict Māori cultural and spiritual practices. Consultation feedback elaborated further, raising concerns regarding adaptation, toxicity and the viability of some biogenic methane inhibiting compounds as mitigating agents due to concerns for animal health, food safety and environmental impacts. Submitters also indicated that effective biogenic methane vaccines may become too expensive to use or may be subject to licensing restrictions.
- There is also potential that Māori, given their tikanga based management approach, could demonstrate leadership in the transition to a low emissions Aotearoa.

⁴⁸ Such as those who moved early to reduce nitrate discharge and were subsequently locked into lower NDAs than neighbouring farmers who operated more intensively.

⁴⁹ (BERL, 2021)

- Historically, under Crown management, some Māori-collective landowners were locked into perpetual leases (often peppercorn leases for 100 years)⁵⁰. Where these leases are still active, Māori landowners are not able to exercise rangatiratanga or kaitiakitanga.
- We heard that often Māori-collectives looking to improve on-farm practice are limited by the capability and knowledge of their farm advisors. If they are not able to access the right advisors, the flow-on effects compromise improvements in monitoring, measuring, on-farm practice, management and governance oversight.

Opportunities

Some key opportunities associated with agriculture for Māori-collectives include:

- Māori we talked to are already exploring options to improve on-farm practice, plant up marginal land, transition to regenerative farming or diversify land use, including to mānuka/kānuka honey.
- Some Māori-collectives are actively planting up waterways and boundaries in alignment with kaitiaki values. Support for these initiatives could help build skills and nursery stock amongst whānau and hapū for larger or ongoing initiatives.
- More research into the efficiency and profitability of regenerative farming would assist Māori landowners in understanding how to maximise productivity while maintaining the right balance across their social, cultural, economic and environmental outcomes.
- Māori-collectives who were early adopters of better waste management and environmental protection practices should be recognised in pricing policies.
- Māori-collectives should be able to manage their emissions by takiwā in accordance with whakapapa and traditional kaitiaki management practices.
- Improved monitoring and measuring tools for on-farm inputs and runoff. Efficiency metrics/ratios that are supported by the External Reporting Board (XRB) and audit processes.

Alignment with Treaty Principles

Key considerations in alignment with the Treaty principles of partnership, participation and protection include (Table 10.3):

Table 10.3: Key considerations on agriculture in alignment with Treaty principles

Requirement		Consideration
Partnership	1.	An emphasis on rangatiratanga and a genuine partnership with Iwi/Māori would enable a kaitiaki approach to resource management.
	2.	Partnership is essential to progressing viable options and removing barriers to progress transitional land use.
Participation	3.	Consideration should be given to ensure Māori collective landowners are not further disadvantaged when perpetual leases expire.
	4.	Consideration should be given to how monitoring and measuring tools for on-farm inputs and runoff can be improved. Also, the introduction of

⁵⁰ Peppercorn lease - is generally used to describe a lease that has nil or nominal lease payments. The term also includes leases with lease payments that are more than nominal but significantly below market value.

Requirement	Consideration
	efficiency metrics/ratios that are supported by the XRB and audit processes.
	5. Consideration should be given to ensure Māori-collectives have access to farm advisors with the appropriate level of capability and expertise to provide suitable advice.
	6. Consideration should be given to the nature of support available to smaller Māori-collectives, and if it is fit-for-purpose, to increase uptake of education and funding initiatives to support optimal land use or the skills/knowledge required to support transitioning land use.
	7. Consideration should be given to the availability of access to Māori-collectives for training on the NZ ETS to promote equitable participation.
	8. Consideration should be given to climate change policy and associated regulations and how they would enhance the ability for Iwi and Māori to exercise rangatiratanga and kaitiakitanga within their takiwā.
Protection	9. Consideration should be given to Māori-collectives' ability to produce kai for their whānau, hapū and Iwi in accordance with cultural practice (e.g., manaakitanga) and food sovereignty strategies.
	10. Consideration should be given to species diversification for example, natives (e.g., kānuka/mānuka, for short term and by-products, or long-term species such as kauri, tōtara and rātā) or exotics (e.g., pine, Douglas fir, beech and eucalyptus).

10.3.6 Other land use

In addition to forestry and agriculture, Māori-collectives are also exploring a range of other land use options which align with their social, cultural, environmental and economic drivers. These options include:

- **Wetland restoration** – we heard from Māori-collectives that from around the 1950s, Crown initiatives encouraged the draining of wetlands for conversion to farming. This disrupted the preservation of endemic species in the rohe and associated cultural practices. Restoring drained organic soils to wetlands can help prevent the loss of soil carbon stocks.^{51,52} Some Māori-collectives see wetland restoration as an important contribution to balancing land use and enhancing biodiversity.
- **Eco-sanctuary development** – consistent with kaitiaki drivers, Māori-collectives discussed plans to develop eco-sanctuaries on their ancestral māunga – such is the case with Tauhara Mountain Trust (approximately 1,165 ha). Working alongside Māori-collectives (e.g., relevant Iwi, hapū, or Ahu Whenua Trusts) could create opportunities to increase carbon stocks on ancestral mountains. Some of the barriers include resources (costs, time, biological stock, fencing), knowledge and capability.
- **Papakāinga development** – with the increased demand for quality affordable housing, some Māori-collectives are looking to utilise collectively-owned land for papakāinga development.

⁵¹ While wetlands store large amounts of carbon, wetland restoration in Aotearoa has modest and highly uncertain carbon sequestration rates. (Burrows et al., 2018)

⁵² See 'Wetland drainage and rewetting' defined in (UNFCCC, 2012, p. 13).

Māori-collectives we engaged with discussed that they are even considering reducing forestry stocks to accommodate the needs of their people. There is an opportunity to work alongside Māori-collectives to explore options for papakāinga development projects with a low carbon footprint. While we did not engage widely on papakāinga development, there are examples of leadership in low carbon development on collectively owned Māori land.

- **Land use diversification** – many Māori-collectives we engaged with or reviewed practice a range of land use diversification options including planting up marginal areas of farmland, replanting areas with kānuka and mānuka, expanding into honey, growing ginseng in pine forests, identifying areas of land suitable for horticulture, hemp, medicinal cannabis and exploring land based koura (freshwater crayfish) farming. Part of the rationale is to spread risk, but also to reduce emissions, or look for land use options which are better aligned with the broader social, cultural, environmental and economic outcomes. Further investigation into some of these diversification models could provide exemplars for other landowners wanting to take a more holistic approach to land use.

In general, we heard from some Māori-collectives that managing emissions and achieving positive environmental outcomes can be challenging given the insufficiency of tools to effectively capture all of the inputs which are relevant to kaitiaki-based resource management.

10.3.7 Energy and Electrification

Background

In this section we identify areas where Iwi and Māori could be impacted by emissions reduction options outlined in the 2021 Supporting Evidence. For a more thorough exploration of reductions relevant to energy use and generation refer to *Chapter 5: Reducing emissions from energy and industry* and *Chapter 6: Reducing emissions from transport, buildings and urban form*.

Key considerations for Iwi and Māori include:

1. **Energy equality** - Māori engage in many aspects of the energy supply chain as owners and kaitiaki of natural resources used in energy production, as producers and consumers. Many Māori-collectives own forestry, lake beds and geothermal assets, and they operate these in various arrangements, including with power companies. As consumers, tangata whenua comprise 16.5% of the population, projected to increase to 20% by 2038. Given the income gap for Māori compared to the rest of Aotearoa (estimated at \$140 less per person per week) and the proportion of multi-family households in areas such as Auckland, Gisborne, Hawkes Bay and Bay of Plenty, increased electricity consumption associated with increased electrification could exacerbate inequitable outcomes for Māori.⁵³
2. **Transport** – about 25% of Māori in Aotearoa reside in Auckland with whakapapa connections outside of Auckland, similar to Māori residing in other urban centres across the motu. Advancing electrification of transport requires proactive, targeted support to ensure that lower income and rural households could also benefit from electric vehicles. Urban Māori who regularly travel long distances to return to their marae/whenua to practice ahi kā may also be

⁵³ (BERL, 2021)

impacted. We also heard that in rural areas, whānau, who are often large, are heavily reliant on vehicles. Particularly when the local bus service runs between 9am and 3pm, this makes public transport inaccessible for whānau members working in and attending education facilities. Some Māori-collectives are already investigating options to provide access to electrified transportation for whānau (including bikes and community-based car share options), however, more support is required to make low emissions transportation options more accessible to Iwi/Māori.

3. **Māori Economic Development** - since the Treaty settlement process began to acknowledge historic grievances with redress packages, there has been a resurgence of Māori economic development over the last few decades. The effect has been a developing economy within a developed economy. Transitioning to a low emissions Aotearoa could create inequitable outcomes for Māori-collectives, particularly Iwi/PSGEs, who are just starting to generate returns from their recently returned assets. Then there are Māori collective landowners with perpetual leases coming up for termination who have yet to start operating in accordance with their own aspirations.
4. **Geothermal** - several Māori-collectives, particularly Iwi, hapū and Māori land trusts between Whakaari Island (White Island) and Tongariro, have strong associations with geothermal energy, which, in these areas, is a taonga brought to Aotearoa by Ngatoroirangi (note: Iwi and hapū from other rohe or takiwā will have their own stories). Iwi and hapū from these areas have many customary practices associated with the use of geothermal energy. Some Māori-collectives utilise geothermal as a direct energy source for food production and other industrial processes, and a few are also exploring carbon capture storage and hydrogen fuel cell technology. While the majority of energy generated from geothermal power plants have relatively low life-cycle emissions, there are some geothermal fields that emit high levels of carbon dioxide.
5. **Hydropower** - currently Iwi/Māori rights and interests in freshwater are unresolved. Some Māori-collectives are still working to have their rangatiratanga acknowledged, other Māori-collectives are recognised as the rangatira of lake beds, but not the water bodies within them. Accordingly, some Māori-collectives work in partnership with power companies operating hydro power generation. We heard these schemes impact on the biodiversity within and surrounding lakes. We also heard stories about lakeside erosion, possibly caused by movement on top of the water level, and Māori we talked with believe this activity has caused their lakes to change over time.
6. **Building** - the shortfall in housing stock and the desire for some Māori to return to their turangawaewae presents an opportunity for new papakāinga developments to incorporate low carbon materials and energy efficient buildings.
7. **Off-grid for community resilience** - we also had discussions with representatives of hapū with aspirations for their communities to go off-grid to enhance the resilience of whānau and promote self-sufficient communities to future proof against unforeseen shocks and uncertainties. One of the major barriers to realising these sorts of aspirations is cost and access to capital.

8. **Renewable energy** - given Māori-collectives' participation in forestry and ownership of large contiguous or amalgamated land holdings, there are opportunities to further explore bioenergy as well as solar and wind generation.

Barriers

Based on engagement discussions with Māori-collectives some of the barriers to changing behaviours and/or reducing emissions or up taking opportunities are outlined below.

A key disadvantage, raised through engagement, was the disruption of Iwi and Māori integration along the value chain, which was prevalent in early Māori economic models. Aside from the enduring social, cultural and economic disadvantages consequent of colonial history, Iwi and Māori continue to experience the time dimension of these impacts. This is particularly evident economically where Iwi and Māori were denied opportunities to benefit from the use of their resources and capital appreciation of assets acquired or confiscated, revenue generation from the asset base over time or time value of money.

We heard that there are a lot of whānau experiencing energy poverty, while in some cases Iwi or Māori-collectives responsible for managing the resources that are used in energy production have no direct means to provide alternative products or services to these whānau.

Mātauranga is localised knowledge, retained and maintained in different ways to standard western pedagogies or methods of knowledge capture and dissemination. To ensure the preservation and vitality of endemic species and unforeseen future impacts of natural resource utilisation for energy use, there needs to be a deeper exploration of mātauranga associated with the realms of atua, including Tāne-mahuta, Tangaroa and Rūaumoko in different takiwā. Drivers that would trigger further exploration include feasibility and viability of tidal-energy production, extraction of minerals used as an input for energy storage, such as lithium, as well as the impacts of hydro energy on indigenous biodiversity and its natural habitats.

As for other emissions reduction options, acknowledgement of rangatiratanga and a genuine partnership with Iwi/Māori is essential to ensure future energy requirements take a kaitiaki approach to resource management and trade-offs between sufficient energy supply and protecting our natural environment. Going forward, consideration should be given to strategic partnerships between the Crown and Iwi and Māori where there is an opportunity to advance research and development in carbon capture storages and hydrogen fuel cell technology.

Alignment with Treaty Principles

Key considerations in alignment with the Treaty principles of partnership, participation and protection include:

Table 10.4: Key considerations on electricity and electrification in alignment with Treaty principles

Requirement		Consideration
Partnership	1.	Emphasis on rangatiratanga and a genuine partnership with Iwi/Māori is essential to ensure future energy requirements take a kaitiaki approach to resource management and trade-offs between sufficient energy supply and protecting our natural environment.
	2.	Consideration should be given to opportunities for Māori-collectives within a takiwā to partner with the Crown in future local/regional energy production and distribution investments where benefits can flow through to whānau (particularly low-income households) and businesses.
	3.	Consideration should be given to strategic partnerships between Crown, Iwi and Māori where there is an opportunity to advance research and development in carbon capture storages and hydrogen fuel cell technology.
Participation	4.	Māori-collectives, particularly Iwi and hapū, should be able to effectively exercise their rangatira and kaitiaki roles within their takiwā and participate in resource and asset management.
	5.	Consideration should be given to the energy requirements of the Māori economy as a developing economy, particularly in remote/rural communities.
	6.	Consideration should be given to potential inequitable impacts on Iwi and Māori of increased electrification, particularly Māori living in low-income households.
	7.	Consideration should be given to support self-sufficient energy infrastructure in papakāinga development projects or projects which enable remote Māori communities to go off-grid, particularly where it enables whānau to live out their cultural and social aspirations in a low emissions way.
Protection	8.	A genuine acknowledgement of rangatiratanga is essential to ensure Māori can exercise their kaitiaki roles and manage and protect natural resources within their takiwā.
	9.	Further exploration of mātauranga Māori should be prioritised to identify potential future impacts of natural resource utilisation for energy use.

10.3.8 Fisheries

Background

To date, our work programme has not focused on impacts for Iwi/Māori fisheries, however, on the basis that Māori-collectives hold 50% of quota, further work will be required. The connection Māori have with fishing and harvesting kai moana is embedded in whakapapa that links Māori to Tangaroa (the ocean) through space, place and time. Kai moana has an extensive history of sustaining Māori nutritionally, socially, culturally, spiritually and economically. Prior to European colonisation, this connection to kai moana saw Māori coastal communities flourishing, with a strong economic base dependent on fishing.⁵⁴

⁵⁴ (Memon & Cullen, 1992)

Low market demand and virtually no European competition enabled Māori fishing practices to continue as they did prior to colonisation for about thirty years after the Treaty was signed.⁵⁵ By the 1870s certain fishing laws were introduced, which severely restricted Māori fishing interests with respect to where they could fish and what they could fish. These limits were based on a European assumption of what Māori required to satisfy their personal needs.⁵⁶ These limits and Crown imposed actions had an ongoing negative effect on tikanga, mātauranga, cultural rights and access to fishing grounds and disrupted whakapapa connections to the moana.⁵⁷

Over time, Māori cultural, social, economic and environmental connections to fisheries were further disrupted through stock depletion, habitat degradation and government-imposed fisheries policies.^{58,59} The introduction of the Exclusive Economic Zone Act 1977 almost eliminated the Māori economy dependant on fishing activities and excluded Māori fishing practices and associated kaitiakitanga and mātauranga.⁶⁰ The fishing industry restructure in the 1980s, which removed commercial fishing rights for part-time fishers (many of whom were Māori), and the introduction of the Individual Transferable Quotas (which later became the Quota Management System (QMS))⁶¹ raised concerns that Māori rights to fisheries, guaranteed under the Treaty, were being alienated by the Crown.

This series of events led to the Muriwhenua claim in 1986⁶² and the subsequent Muriwhenua Fishing Report (1988)⁶³ which was instrumental in the 1992 Māori fishing claims to offshore fishing.⁶⁴ The Muriwhenua Fishing Report found that the Crown was in breach of Treaty obligations, which revealed that the allocation of rights had not recognised Māori interests. In 1989 the Māori Fisheries Commission was set up to aid Māori entry into the fishing industry and by 1992 Māori gained control over one third of our country's commercial fisheries.⁶⁵ Through settlement Māori acquired 50% of Sealord (the largest fishing company in Aotearoa) utilising redress assets and were awarded a further 20% of the commercial quota shares of any new species brought into the QMS.⁶⁶

The Māori Fisheries Act was passed in 2004 and Te Ohu Kaimoana was established to oversee the settlement of all Māori commercial fishing assets.⁶⁷ Half of the settlement redress (quota) was allocated to Iwi. The assets of the Treaty of Waitangi Fisheries Commission (cash) were allocated to a new company, Aotearoa Fisheries Limited, the custodian of commercial fisheries assets that were returned to Māori through the Treaty of Waitangi Fisheries Settlement with the Crown.⁶⁸

⁵⁵ (Waitangi Tribunal, 1989, p. 78)

⁵⁶ (Waitangi Tribunal, 1989, p. 78)

⁵⁷ (Wehi et al., 2013)

⁵⁸ (Memon & Cullen, 1992)

⁵⁹ (Hale & Rude, 2017)

⁶⁰ (Memon & Cullen, 1992, p. 158,162)

⁶¹ (Hale & Rude, 2017)

⁶² (Waitangi Tribunal, 1989, p. 5)

⁶³ (Waitangi Tribunal, 1989)

⁶⁴ (Taonui, 2017)

⁶⁵ (Ellison, 2010)

⁶⁶ (Waitangi Tribunal, 1989)

⁶⁷ (Science Learning Hub, 2009)

⁶⁸ (Glaysheer et al., 2014)

In 2018, Aotearoa Fisheries Limited rebranded as Moana New Zealand (Moana). It is the largest Māori-owned seafood company and operates across four divisions of the seafood industry including inshore fishing, oyster farming, deep sea fishing and processing. Moana's inshore vessels are made up of a fleet of contract fishers, mainly small whānau owned businesses that have been harvesting seafood for generations.⁶⁹ Sealord's fleet is comprised of eight deep-sea vessels. Both fleets are made up of vessels that vary in size, age, species targeted, fish hold capacity, number of employees and on-board production methods.⁷⁰ Ngāi Tahu is another major stakeholder in the Māori fisheries sector. Ngāi Tahu Seafood Group is one of the leading seafood companies in Aotearoa^{71,72} and a niche supplier of high-quality seafood to international and domestic markets. Ngāi Tahu quota is predominantly caught by Ngāi Tahu fishers; many are whānau who have been fishing for generations.⁷³

In 2018, emissions from fuel use on fishing boats was around 0.08 MtCO₂.⁷⁴ Refrigeration systems on boats also use hydrofluorocarbons which can leak and contribute to carbon emissions in Aotearoa.⁷⁵ It is possible that the Māori fisheries sector will be impacted again as we transition to a low emissions Aotearoa. While emissions associated with fisheries, or the impacts of ocean acidification on kaimoana was not a key focus of our work programme for the first emissions budget period, our next phase of work will explore how emissions reductions in Māori fisheries could impact Iwi and Māori going forward.

⁶⁹ (Moana New Zealand, 2017)

⁷⁰ (Sealord, 2016)

⁷¹ (Meridith, 2006)

⁷² (Ngāi Tahu Seafood Limited, 2018)

⁷³ (Ngāi Tahu Seafood Limited, 2018)

⁷⁴ (Ministry for the Environment, 2020)

⁷⁵ (Ministry for the Environment, 2018)

10.4 Summary: He Ara Waiora wellbeing domains

To summarise, we have drawn on the wellbeing domains identified in He Ara Waiora v.2 as a useful categorization framework⁷⁶ to reiterate what we heard in respect of what ‘good’ would look like for Iwi and Māori (Table 10.5).

Table 10.5: What we heard in the context of He Ara Waiora wellbeing domains

Wairuatanga	Taiao	Mana Tuku Iho
Source of wellbeing	Environmental wellbeing	Identity and belonging (individual and communities)
<p>Note: further work to be done in this domain.</p> <p>Suggestions included enhanced mauri within our natural environment as co-benefits will flow through to individuals and communities.</p>	<p>A healthy environment, clean water and air, managed through recognised measures.</p> <p>The presence and abundance of indigenous species and mahinga kai species in particular.</p> <p>Management and restoration of sites of significance, native restoration and/or remnant vegetation.</p> <p>Ability of taiao and mahinga kai sites to sustain traditional Māori values and practices.</p>	<p>Strong in cultural identity, social connectedness, social capital, te reo and culture.</p> <p>Confident resilient communities following their aspirations. Thriving communities that have access to services, food, etc.</p> <p>Sustainable use of quality traditional food and other cultural resources.</p> <p>Activities within a low environmental footprint, including being carbon neutral.</p> <p>Full participation in communities, particularly in a future with increased electrification.</p>
Mana Tau utuutu	Mana Āheinga	Mana Whanake
Interdependent rights and responsibilities	Aspirations and capabilities	Sustainable prosperity
<p>A genuine expression of Treaty Partnership and acknowledgement of Rangatiratanga.</p> <p>Rangatiratanga and kaitiaki roles are exercised.</p> <p>Māori emissions profile of each takiwā enables Iwi and hapū to actively manage emissions and provide full disclosure.</p> <p>Māori are not further affected by the compounding of historic grievances.</p>	<p>Resources for example, knowledge, skills, education, healthy homes, time use, living healthy lifestyles, connectivity, etc.</p> <p>Sustainable jobs which are fit for purpose in the future.</p> <p>Food sovereignty, access to education and employment opportunities which enable whānau to have high quality employment in the regions proximate to their communities.</p>	<p>Sustainable prosperity, jobs, employment and earnings, income and consumption, economic resilience within whānau, Kāinga and broader community.</p> <p>Wages/koha in return for services to the kāinga recognising opportunity cost for time and ensuring tikanga is upheld and retained over generations.</p> <p>Intergenerational prosperity.</p>

⁷⁶ A Māori wellbeing framework (developed through a collaboration between the Treasury and a group of Māori thought leaders) identifying wellbeing outcomes from a Māori perspective.

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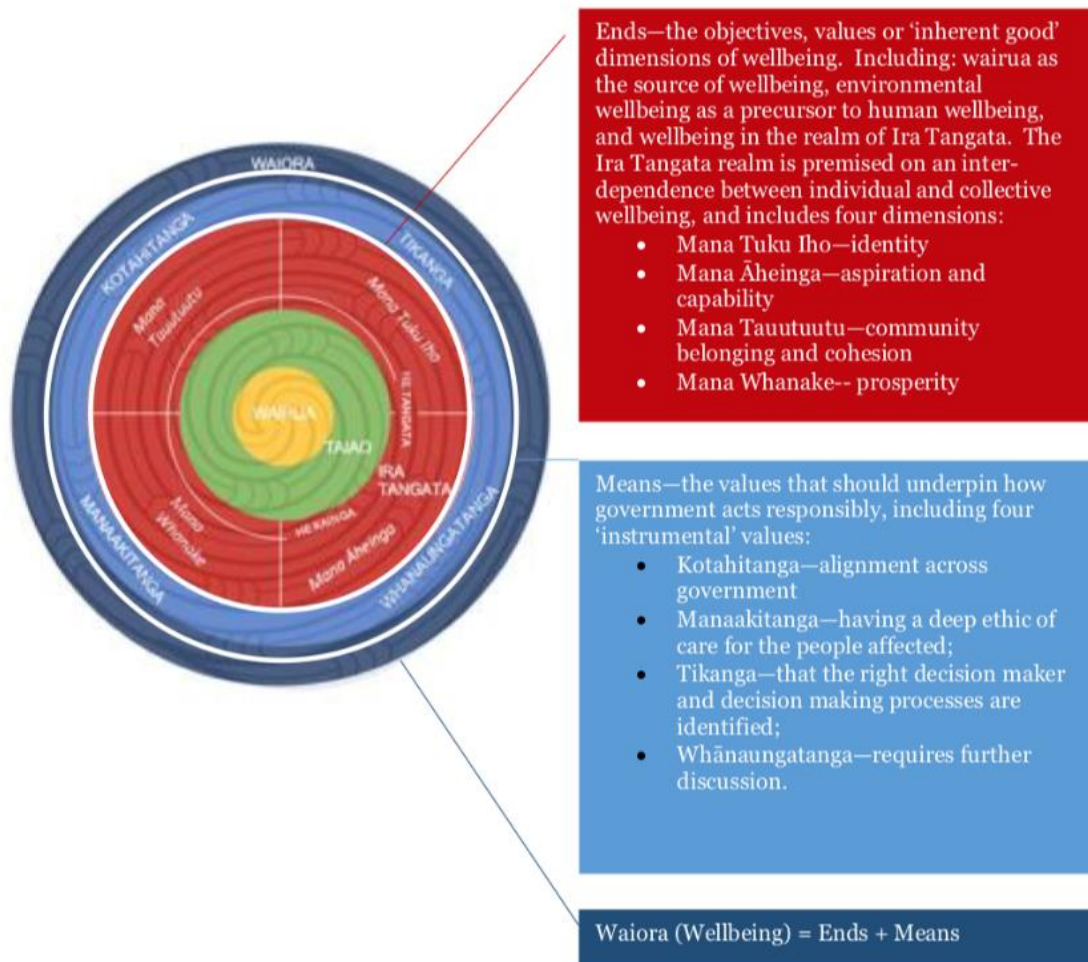
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VERSION 2.0 HE ARA WAIORA MODEL

The principal point of evolution in Version 2.0 is that it incorporates and delineates between both **ends and means**, whereas Version 1.0 was less clear on the relationship between ends and means.

The ends and means relationship in He Ara Waiora is as depicted below:



Key contributors over the course of the development of this framework included ⁷⁷:

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⁷⁷ (McMeeking et al., 2019)