Indigenous Approaches to Achieving Food Security and Sustainable Agriculture in Aotearoa New Zealand: Why Culture Matters in Achieving Sustainable Development Goal 2

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Erin James Withers

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Abstract

As a signatory to the United Nations (UN) 2030 Agenda for Sustainable Development, Aotearoa (Māori name for New Zealand) ratified the Sustainable Development Goals (SDGs) in 2015. Ending poverty, improving health and education, reducing inequality, promoting environmental sustainability and lifting economic growth are desired outcomes of the SDGs. Food security and sustainable agriculture play a critical role to enable this. In the context of SDG2 which calls to *end hunger, achieve food security and improved nutrition and promote sustainable agriculture*, target 2.3 upholds a strong commitment to Indigenous approaches in agricultural productivity to achieve this goal. Despite upholding Indigenous people's contribution to SDG2, research on Indigenous people's inclusion and participation in agricultural productivity as conceptualised by SDG2 is limited.

In common with other Indigenous peoples in developed countries, Māori (Indigenous people of Aotearoa) experience a higher risk of food insecurity than other population groups. However, through the literature and a case study analysis on an Indigenous food initiative known as Ngā Hau e Wha Maara Kai, this research shows that there is hope for culturally appropriate food producing approaches to enable food security and promote sustainable agriculture. A wider literature review also showed that Māori communities are revitalising mahinga kai (traditional food gathering places and practices) and māra kai (vegetable gardens) that understands the economy as a wide range of diverse practices, which in turn promotes a transformative agricultural food system that is healthy, economically viable and culturally sustainable. The four pillars of the food security framework embedded in the SDGs – availability, accessibility, utility and stability – not only provide a foundation for healthy and sustainable food secure environments, but creates opportunity to embrace *culture* as a key dimension to strengthen the four pillars for an inclusive and transformative sustainable development agenda. This lends itself to principles of Indigenous development and post-development thinking, which opens wider whaikōrero (formal oration) around development discourse to include local cultural priorities and well-being for Indigenous communities as 'conditions of possibility' within the mainstream development gaze. While Māori participating in these food producing initiatives benefit from the provision of healthy kai (food), food insecurity for Māori within the wider Aotearoa context persists.

Acknowledgements

My research is inspired by the belief that growing food connects people to the land, to the seeds, to the plants. I also believe growing food instils diversity and freedom – key ingredients that rejuvenate culture and community. I dedicate this research to people who align their community food initiatives as sites of agency and uphold the belief that land is both a cultural and environmental determinant of health and well-being for Indigenous peoples. In this respect, I have a deep admiration for the resilience with which Māori have sought self-determination, whereby land is a fundamental source of identity and spiritual connection that establishes a grounding for their health and well-being. Community food initiatives that lift the mana of the land remind us of the importance of a Māori worldview and gardening approaches that also greatly lifts the value and life force of the māra in restoring the collective control over choice and production of fresh healthy food. Gardening provides a site to act!

I wish to thank my supervisor Prof. Regina Scheyvens for her ongoing support, advice, flexibility and enthusiasm throughout this process - ngā mihi maioha[1]! Thank you to my tamariki Finn and India for supporting my journey and the motivating drive through hugs and words of kindness and strength - kia kaha e hoa ma[2]! I wish to thank my partner Kerry-Lee. Your enduring support, patience and repeatedly explaining commas kept my flame burning-you kept me alight - Ka nui taku aroha ki a koe[3]! I would like to thank my mother Betty who in her many quirky ways instilled a seed of passion in me for the garden - E iti noa ana nā te aroha[4].

I would like to acknowledge Nick Roskruge for supporting my research with his wealth of knowledge and thirst of excitement about all things in the māra. I thoroughly enjoyed the road trips to Taumarunui and it was these journeys that opened my thinking to traditional food gathering places and practices as sites of possibilities - ngā mihi nui[5]! Finally, gardens provide a rich space and place of culture and community spirit, therefore without the active participation, support and time from the people of Ngā Hau e Wha Maara Kai, this research would not be as vibrant, and I hope, as transformative in ways of knowing, living and being in

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[1] Thank you with appreciation.
[2] It can be done.
[3] My love for you knows no bounds.
[4] A small thing given with love
[5] Thank you very much.

the māra, without sharing your stories, knowledge, abilities and kai. You have the abilities and resources to create success - he kai kei aku ringa[6].

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[6] There is food at the end of my hands.

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Glossary

Aotearoa	Māori name for New Zealand literally meaning 'land of the long white cloud'
Hui	Gathering, meeting
Iwi	Tribe
Kai	Food
Kaitiaki	Guardianship of the sky, sea and earth
Kaitiakitanga	The practice of kaitiaki
Kanohi ki te kanohi	Face-to-face
Kōrero	Narrative, to speak
Kotahitanga	Collective unity and solidarity
Kura	School, house of learning
Māhaki	Humility
Mahinga kai	Traditional food gathering places and practices
Māra kai	Vegetable/cultivated garden
Mana	Dignity, integrity, charisma, formal jurisdiction
Manaaki	Care and responsibility
Manaakitanga	Hospitality, cultural and social responsibility
Māori	Indigenous people of New Zealand
Matatika Māori	Māori research ethics
Mātauranga	Māori knowledge systems
Mauri	Life force
Ngā Hau E Wha	The four winds of Tawhirimatea (God of the Winds)
Pākehā	Non-Māori, European
Papatūānuku	Earth Mother
Pātaka	Storehouse of seeds, plants and knowledge
Rangatiratanga	Sovereignty/self-management
Ranginui	Sky Father

Rongo-ma-Tane	Guardian of cultivated crops
Taha hinengaro	Mental and emotional well-being
Taha tinana	Physical well-being
Taha whānau	Social well-being
Taha wairua	Spiritual well-being
Tamariki	Children
Tangata whenua	People of the land
Tangihanga	Funeral
Tapu	Sacredness, restriction
Te Ao Māori	Māori world
Te Ara Tika	Māori ethical framework
Te Tiriti o Waitangi	The Treaty of Waitangi
Te mahi māra	Māori gardening practice
Te Whare Tapa Wha (hauora)	The house of four sides (health)
Tika	Research design, accuracy, reliability
Tikanga	Māori cultural values and practices
Whaikōrero	Formal oration
Whakapapa	Genealogy
Whakawhanaungatanga	Establish relationships
Whānau	Family/extended family
Whenua	Land

Source: Ryan, P. (2001, [1995]).

Chapter 1: Introduction

1.1. Introduction and overview

The United Nations (UN) outcome document Transforming Our World: The 2030 Agenda for Sustainable Development[7] came into effect in 2015. As a global framework, this document informs the Sustainable Development Goals (SDGs) comprising 17 goals and 169 targets. The SDGs are integrated and indivisible, suggesting the goals are interconnected and cross cutting; addressing one goal must be seen within the broader context of all goals and targets. The three pillars of sustainable development - the social, economic and environmental dimensions - integrate the 2030 Agenda around the themes people, planet and prosperity. The mantra *no one will be left behind* binds all countries to an agreement to implement the SDGs and in doing so make transformative steps toward a sustainable and resilient path, ensuring development represents a myriad of realities. As such the SDGs are about development for developing and developed countries alike. As a member of the UN, Aotearoa (Māori name for New Zealand) has endorsed the SDGs and is expected to implement a strategy to end poverty, improve health and education, reduce inequality, promote environmental sustainability and lift economic growth.

This research report focuses on addressing the challenges of food security and sustainable agriculture which features prominently in SDG2 Zero Hunger to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture". This goal focuses on an integrated approach to food security addressing all forms of hunger and malnutrition, the resilience of food systems and the development of sustainable agriculture. Important to this study is the inclusion of Indigenous people's approaches to small-scale food production and sustainable agriculture as expressed in Target 2.3 of SDG2. Further reference to Indigenous people's participation is implicit in Target 2.1 ensuring access to safe, nutritious and sufficient food all year round by all people, in particular the poor and vulnerable. Resilient agricultural practices that preserve ecosystems, the maintenance of seed and cultivated plant diversity through well managed seed and plant banks, as expressed in Targets 2.4 and 2.5, implicitly connect Indigenous food security and sustainable agriculture with the successful outcome of this goal. Box 1.1 lists all targets in full associated with SDG2 with the highlighted targets in

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[7] Future reference to this agenda is expressed as the 2030 Agenda or the SDGs.

bold especially relevant to this research. This study explores how the inclusion of Indigenous peoples and their knowledge toward achieving food security and sustainable agriculture is envisioned by Māori (Indigenous people of Aotearoa). As a signatory to the 2030 Agenda, Aotearoa has agreed to uphold certain commitments and conditions for Māori, including giving Māori a voice and representation in terms of what this framework means from an Indigenous perspective. Therefore, it is worth exploring Indigenous food systems in the context of what food security and sustainable agriculture means to Māori as conceptualised in SDG2.

2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

Box 1.1: Associated Targets of Sustainable Development Goal 2, Zero Hunger.

1.2.   Personal interest in the topic

The initial inspiration, the seed as it were, for this research came from teaching an environmental education programme at a rural Māori boys' college in the Manawatū. Enlightening Māori youth about the centrality of ecosystems, food and life to their culture, while connecting tikanga (Māori cultural values and practices) to the greater realm of their

identity and sense of belonging, was at the heart of this endeavour. Seeing and feeling the potential to reignite mātauranga Māori (Māori knowledge systems) into an otherwise disconnected mainstream curriculum not only stimulated excitement but challenged my own knowledge, authority and ability to deliver a programme as pākehā (non- Māori, European). Developing and teaching this programme made me reflect and enact other ways of knowing, living and being. A decade later, this has become the heart of this research – acknowledging 'possibilities of difference', in that diversity exists in a world that is made up of a pluriverse of knowing, living and being. This also supports my understanding of the cultural constructs associated with food security and sustainable agriculture from an Indigenous perspective and how a Māori world view shapes the broader context of SDG2.

1.3. *Background and rationale*

Relevant to the timing of this study is the impact COVID-19[8] has on food systems and food security. While COVID-19 was not a global concern when I conceived this study in 2019, since then COVID-19 has exposed the world to an already unsustainable agro-food system, the extent we rely on this system to deliver food and how fragile these systems are at a time of pandemics. Studies have found that widespread human induced habitat destruction has played a crucial role in explaining why the rate of emergence of infectious diseases has been increasing over the past 40 years. For example, deforestation, intensified agriculture and livestock farming, and climate change have all been linked to the emergence of Ebola virus, HIV, Nipah virus, coronavirus, and Zika virus (Dennis et al., (2018); Everard et al., 2020; Jones et al., 2013). The present outbreak of COVID-19 also highlights the effects health and financial shocks have on Indigenous food security. During pandemics Indigenous populations are particularly at risk (Zavaleta-Cartijo et al., 2020). Disruptions to food security exacerbate an Indigenous population's vulnerability through reduced access to food, changes in diet resulting in malnutrition and poor health outcomes, and lost income resulting from lockdowns. It is timely then to address the current and emerging health, economic, environmental and societal crises as they relate to Indigenous peoples and to rethink and rebuild resilient, healthy, sustainable and equitable food systems. The relevance of localised

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[8] COVID-19 was experienced once research was underway, hence is not a key feature of the research.

food economies must be seen as a cornerstone of not only a post-pandemic recovery, but an opportunity to transform food systems and make tangible inroads to achieve SDG2.

In common with Indigenous peoples in developed countries, Māori experience a higher risk of food insecurity than other population groups in Aotearoa. Food insecurity occurs within the context of poverty, with limited ability and entitlements to access sufficient and healthy food as discussed by Sen (1981). This has important implications for Māori health and wellbeing as expressed in the founding and living treaty of Aotearoa, Te Tiriti o Waitangi (Treaty of Waitangi). Te Tiriti established the terms and conditions between Māori and the Crown, which upholds the principles of partnership, participation and protection. Tikanga Māori plays a critical role to ensure health and well-being for Māori. Likewise, tikanga underpins Māori approaches to food security and the food systems in which safe, healthy, culturally appropriate and sufficient kai (food) is produced. Therefore, Māori ways of knowing, living and being in the māra (vegetable garden) and mahinga kai (traditional food gathering places and practices) has the potential to contribute to enhancing food and livelihood security as well as enhancing Māori health and well-being.

This report draws on post-development thought to address food security and sustainable agriculture. A vital element of achieving food security and sustainable agriculture is empowering Indigenous people to make their capacities, assets and possibilities of small-scale food economies visible. In support of the literature, Ngā Hau e Wha was chosen as a case study not just as a small-scale food producing model, but as an economic model that is part of a diverse food economy with deep commitments to ethical and sustainable practices akin to what SDG2 seeks to achieve. Undertaking a case study research approach also provides an opportunity to encounter the people and places associated with community centred sustainable food production and consumption. Personal experience/narratives and life stories in terms of how Māori perceive food security and sustainable agriculture supports this encounter. This adds vibrancy to the research, legitimises Indigenous voices and opens opportunities for new knowledge to be generated and shared with the aim that research outcomes benefit those who are researched.

1.4.   Research aim and questions

The aim of this research is to explore and understand the cultural constructs associated with food security and sustainable agriculture in the context of SDG2 from an Indigenous Māori perspective. Analysis of relevant literature on the topic is complimented by the case study Ngā Hau e Wha, to see how Indigenous approaches to food production offer potential insights and opportunities for a more sustainable and food secure future for Māori, as conceptualised in SDG2.

Research Questions:

1) In what ways do Māori values and practices in relation to food production and consumption enhance health and well-being among Māori communities?
2) How is Māori knowledge and their approach to food production aligned with food security and sustainable agriculture, as conceptualised by sustainable development goal 2?

1.5.   Chapter outline

The research report commences with a critical analysis of the SDGs in the context of Indigenous approaches to development in Chapter 2. Situated within post-development thinking, this chapter draws on the work from Gibson-Graham (2006) introducing the concept community economies. To achieve development, post-development advocates alternative ways of knowing, living and being, providing a more nuanced and inclusive space for Indigenous approaches to development. It also creates potential opportunities for a cultural dimension within the three pillars of sustainable development (the social, economic and environmental dimensions) to inform the 2030 Agenda more holistically. In Chapter 3 the study looks more closely at food security and how this has been understood since the 1970s through the food security framework. The focus moves to food insecurity within a developed country context noting Indigenous communities are at risk and thus an increasing development concern.

Chapter 4 addresses the research design by discussing Indigenous methodologies. It further explores qualitative research methods through an Indigenous methodological framework known as Te Ara Tika Māori Ethical Framework. This framework acknowledges four Māori cultural principles, in this case whakapapa (geneology), tika (research design), manaakitanga

(hospitality, cultural and social responsibility) and mana (respect) and identifies how positionality, reflexivity and subjectivity are implicated in the research process. The chapter further outlines the case study by way of participant selection and the Indigenous method of kahoni ki te kahoni (face-to-face) as an informal and viable method of data generation. Chapter 5 addresses research question 1 by presenting the findings from kōrero (narrative/to speak) with Ngā Hou e Wha members. Centred on the cultural significance of māra and mahinga kai within the broader context of the social, economic and environmental pillars of sustainable development, distinct Māori values and practices surface as key enablers to provide a food secure and culturally sustainable community food economy. Finally, chapter 6 addresses research question 2 engaging with how Indigenous development aligns with the SDGs. Drawing on the theorisation of community economies, the diverse economies framework highlights how Ngā Hou e Wha parallels similar practices and principles in line with viable alternatives by contributing to the transformative agenda that SDG2 aims to achieve.

Chapter 2: The Sustainable Development Goals, Indigenous Approaches to Development and Community Economies

> As we implement the 2030 agenda for sustainable development, we must do so in culturally appropriate ways that meet the needs of [I]ndigenous peoples and their conceptions of well-being (United Nations Secretary General Ban Ki-Moon's opening speech at the Peoples' World Conference on Climate Change and the Defence of Life, Bolivia, October 2015).

2.1. Introduction

This chapter analyses the SDGs in the context of Indigenous approaches to development. With the SDGs reflecting a western model of development, a critique identifies an over reliance on quantitative measures represents a poor methodology to solving development issues. What this means for Indigenous peoples and their aspirations for development adds to the critique. Noting Indigenous values, beliefs and knowledges have been overlooked, the discussion highlights possibilities for culture to be included beside the three pillars of sustainable development: social, economic and environmental dimensions. Advocating for Indigenous development and situated within a post-development agenda, the concept of community economies is introduced. Community economies exposes globally extensive, yet genuinely credible and viable community-centred economic, social, cultural and environmental alternatives to development.

2.2. The Sustainable Development Goals in Context

The year 2015 marked a new era for development. Known as the 2030 Agenda for Sustainable Development, the United Nations (UN) launched 17 SDGs and 169 associated targets to guide global development for the next 15 years. The SDGs were adopted by 193 member states, including Aotearoa, aspiring to the objective of solving global development issues. The resolution adopted by the United Nations General Assembly (UNGA) suggest this international framework is "unprecedented [in] scope and significance" (2015b p.3). The SDGs are designed to be cross-cutting and the interconnections within them are as important as the individual goals themselves. In essence, they seek to shape the global development landscape by reinvigorating social collectiveness toward a common good in an inclusive way.

Acknowledging inequalities exist everywhere, these goals are relevant to all countries. Taken as a whole, they are about development, not just about developing countries.

The Secretary General's report prior to the launch reinforced these goals, in their universal trajectory, that "all countries will need to change, each with its own approach, but each with a sense of the global common good" (Ki-Moon, 2014, p.14). This universal pursuit also enshrines the phrase *no one will be left behind* in achieving this ambitious agenda (UN, 2015b). Such an approach would seemingly imply alternative ways of doing development as a precondition and possibilities in seeking new ways of doing development differently (McKinnon, 2008). If this is the case, and under the auspices of a global common good, all worldviews have a place in not only shaping this development narrative but a voice contributing to ensure *no one is left behind*. Enabling all worldviews and voices, however, presents multiple challenges at international and national levels with achieving a shared sustainable future, moving forward with the 2030 Agenda and beyond.

2.2.1. Limitations of global goals

Global goals set performance standards to facilitate motivation for countries to improve their development reputation on the international stage. Representing a western model of development, indicators have emerged as powerful tools in assessing, monitoring and reporting on complex phenomena in the global shift toward sophisticated technologies and statistical measurement (Fukuda-Parr, 2014, 2016; Fukuda-Parr & Hulme, 2011; Merry, 2011; Watane & Yap, 2019). Since the inaugural Earth Summit in Rio de Janeiro, Brazil in 1992, there has been a plethora of high-level conferences and meetings seeking to build comprehensive plans of action and partnership on sustainable development. Across a range of global development concerns, from poverty and hunger to equality and climate change action, through to peace and justice, it is suggested that quantitative data allows international institutions and national governments to make evidence-based judgements on the development agenda (Durand, 2015). As a global goal setting agenda put in place to address how and what this development agenda should look like, the SDG framework provides context for prioritisng development policies with the understanding that challenges that lie ahead can be numerically fixed.

Yet global goals give rise to sharp criticisms. They attempt to translate qualitative norms into prescriptive numerical targets (Fakuda-Parr, 2014). Global goals cannot be measured with any precision or certainty (Vandemoortele, 2011), as they box in diversity and simplify how global goals should be for all countries irrespective of their immediate needs and priorities (Adams, 2009). In short, global goals are limited due to the inherently reductionist vision of western development thinking and practice (Fakuda-Parr, 2016). A key finding in an empirical study led by Fukuda-Parr & Yamin (2013) of the Millennium Development Goals and implications for setting a post-2015 development agenda, was that the exclusive reliance on quantitative measures represents a poor methodology. Among the consistent themes in the study was that intangible aspects of participation, equality, voice and accountability are not easily amenable to measurement, yet vital for development as a transformative agenda. Numerical targeting and abstract quantification distort outcomes leading to "divert policy attention from pressing human rights and human development concerns which require legal, political and institutional changes that are not well-suited to quantifiable measurement" (p.63). The effect of simplifying development using the power of numbers can lead to redefining the meaning of development and shape a selective priority to policy which neglects important human-centred objectives. Therefore, a gulf exists in capturing the narratives of all worldviews regarding what development means for those that may not entirely fit within the parameters of a western development paradigm.

2.3. Indigenous Contributions or Missed Opportunities in the 2030 Agenda

2015 marked an important milestone for Indigenous peoples. The plenary meeting of the United Nations General Assembly known as the World Conference on Indigenous Peoples (UNGA) in 2014, reaffirmed commitment in promoting and protecting the rights of Indigenous peoples in the forthcoming SDG agenda, as paragraph 37 states:

> We note that [I]ndigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development. In this regard, we commit ourselves to giving due consideration to all the rights of [I]ndigenous peoples in the elaboration of the post-2015 development agenda (UNGA, 2014, p.6).

The UNGA confirmed the 2030 Agenda to include and extend the rights of Indigenous people and acknowledge their contributions to sustainable development. This acknowledgment serves as a reminder that principles of cultural diversity also correlate with Indigenous

peoples, their concept of development and the role of Indigenous knowledge. More so, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) serves as a key framework upholding the rights to self-determination and relevance of Indigenous conceptions of well-being, knowledge and culture. Explicit reference is made to the underlying principle that all Indigenous people's right to freely determine their political status and pursue their economic, social and cultural development as expressed in UNDRIP (Errico, 2007). This suggests that in 2014 the UNGA acknowledged a strong commitment to supporting Indigenous rights, knowledge and well-being, thus upholding culture as a key dimension in the 2030 Agenda. UNDRIP opens up the debate to consider the plurality of approaches and alternative views to that of the mainstream development gaze.

2.3.1. Cultural dimensions and the pillars of sustainable development

Even though Indigenous people's contributions to sustainable development have been elevated to the highest echelons in the 2030 Agenda and supported through declarations such as the UNDRIP, and the World Conference on Indigenous Peoples (UNGA, 2014), several shortcomings have been identified. Prior to the SDGs in 2015, Indigenous actors challenged the sustainable development agenda noting room for strengthening agreements to respond adequately to the rights and needs of Indigenous peoples. For instance, in preparation of the UN Conference on Sustainable Development in 2011, Indigenous representatives insisted sustainable development is inconceivable without the inclusion of a cultural pillar (Cisneros, 2017). Sharing this sentiment and in critique of the SDGs, Watene & Yap (2015) argue the absence of culture from the widely accepted three pillars of the SDGs – the economic, social and environmental dimensions – provides only a partial view in terms of Indigenous conceptions of development. Further analysis suggests Indigenous perspectives are at large missing from the agenda. With only six references made to Indigenous knowledge/people's in the SDGs goals and targets, and culture mentioned five times, this hardly goes far enough to represent Indigenous ways of knowing, living and being (Yap & Watene, 2019). Seen this way, culture as expressed by Indigenous peoples is underscored and undervalued.

Similar concerns have been raised about the seductive nature of development rhetoric, which is deeply embedded in the SDGs. Kothari et al., (2019) speak of the structural roots development holds in capitalism. An emphasis on economic growth as the driver and reliance

on economic globalisation as the key economic strategy undermines Indigenous people's conceptions of development and their attempts at self-determination. Also at play in development rhetoric is the domination development has over nature. With high rates of resource extraction that conventional development embodies, perpetuates neglect of Indigenous peoples and their immediate priorities (Demaria & Kothari, 2017; Fukuda-Parr & McNeill, 2015; Taylor, 2007; Yap & Yu, 2016). This would suggest the need for an element of caution when using the SDGs to support Indigenous well-being and inclusion left furthest behind in the sustainable development agenda. Yet ironically the SDG framework enshrines that *no one will be left behind*. As Yap & Watene (2019, p.6) put it:

> If we are to seriously consider the SDG's transformative agenda, it is imperative that we ask what Indigenous peoples and communities can contribute to our understanding and development of indicators to represent and monitor sustainable development.

This implies the need for a re-framing of development. To bring forth other imaginaries, goals and practices that include cultural dimensions. In terms of what development means in the context of Indigenous knowledges, and most importantly, offer insights into culturally appropriate ways of doing development differently.

2.4.   Utilising Indigenous Perspectives to Address Development Issues

While it is suggested a binary tension exists between Indigenous knowledge and western development/science (Briggs, 2005), Durie (2004) suggests the interface between the two bodies of knowledge need not be a place of contest, but rather a site providing "opportunities for the expansion of knowledge and understanding" working side by side (p. 1142). Similarly, Taylor (2007) argues a transformational space known as the 'recognition space' exists between Indigenous knowledges and culture, and western development, as illustrated in figure 1.
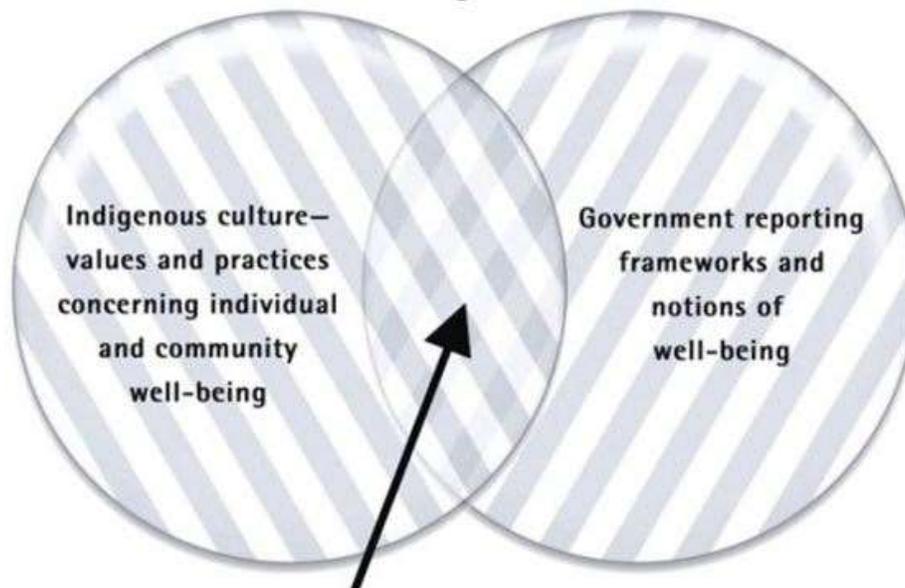
Figure 1: The Recognition Space for Indicators of Indigenous Well-being (Source: Taylor, 2007).

The 'recognition space' is a framework for analysing the different positions held between worldviews, cultures and practices of Indigenous peoples and reporting frameworks informing international and national goals, targets and indicators. The key area is the intersection between these two positions where meaningful engagement provides opportunity to establish a common understanding of different and shared perceptions with the fundamental aim of developing goals, targets and indicators appropriate for Indigenous peoples. Imperative to this is ensuring data collected is relevant to Indigenous people allowing for an understanding of well-being and development critical for Indigenous people's rights to development, for example, control over their own development process, equal participation and decision making and control of their lands and resources (UNDRIP, 2007).

2.5.   Diverse Imaginaries and Post-Development

Development interventions that are responsive to cultural contexts, place and community and advance a human-centered approach to development are likely to yield sustainable, inclusive and equitable outcomes for Indigenous people (Kawharu, 2018; Yap & Watene, 2019). This call for culturally appropriate ways of doing development lends itself to the principles of a more recent post-development set of thinking. Post-development promotes local and grassroots autonomy, seeking solutions by empowering alternative voices, worldviews and processes, or what Gibson-Graham (2008) refers to as 'hopeful geographies'.

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Post-development occupies an in-between position similar to Taylor's recognition space in figure 1: it shares with post-development the critiques of mainstream development but retains belief and hope there is a position for doing development differently, redefining development as a continuous means not just an end result. This tone of hope and possibility reflects development interventions that create "new spaces for alternative policies, imaginings and opportunities" (McGregor, 2009, p.1699). A post-development approach opens wider discussions around the development discourse to include local cultural priorities and cultural well-being for Indigenous peoples as positive "*conditions* of possibility" (Gibson-Graham cited in McGregor 2009, p.1698) within the mainstream development gaze.

A post-development view provides fresh opportunities for acting upon social change beyond the business-as-usual development model. Crucially, post-development thinkers argue that alternative futures can be imagined and are indeed possible in both the Global North and Global South (see for example Bendix, et al, (2019); Cameron & Gibson, (2005); Churchin, (2019); Demaria & Kothari, (2017); Dombroski, (2016); Gibson-Graham, (2005), Healy, (2009); Kothari, et al., (2014); Maiava & King, (2007); McKinnon, (2007)). In this sense post-development thinking and practice are equally supportive of a greater possibility that development is both attainable and desirable if approached differently. Gibson-Graham (2005) share this sentiment:

> The post-development agenda is not, as we see it, anti-development. The challenge of post-development is not to give up on development, not to see all development practice – past, present, future, in wealthy and poor countries – as tainted, failed and retrograde, as though there was something necessarily problematic and disruptive about deliberative attempts to increase social well-being through economic intervention, as though there were a space of purity beyond or outside development that we could access through renunciation. The challenge is to imagine and practice development differently (p.6).

Importantly, post-development advocates different realities informing development and question how is more of the same approach of current development thinking, policy and practice going to lead to any real improvement? A shared viewpoint is the importance of words, languages and representations have in shaping people's lives (McGregor, 2009). Taken collectively, this encourages pluriverse views neglected or supressed by the predominant growth-oriented development to bring forth a diversity of possibilities, goals, and practices in the quest for alternative visions of development.

2.5.1. Diverse global examples of alternatives to development

Alternatives to mainstream development can be found in various parts of the world. For example, La Via Campesina emerged as a food sovereignty movement in the 1990s contesting the dominance of scientists, policy makers and multinational industrial food conglomerates in shaping the food security narrative. This movement created a global counter-narrative based on the politicised and grounded knowledges of Indigenous peoples, peasants, fisherfolk, pastoralists and farm workers (Desmarais & Wittman, 2014). At the core of this is food sovereignty where people define their own food system. Criticising the currents of Industrial agriculture, international trade and championing local and democratic food supply systems, food sovereignty emphasises the democratisation of food systems, policy, practice, knowledge and the rights and autonomy of food producers (Nyéléni Declaration, 2007). In a similar vein, community supported agriculture (CSA) originating in western countries is an alternative farming/food system based on closing the gap between producer and consumer with the intention of localising the production chain (Bendix et al., 2019). Like other alternative approaches each supports diverse practices in their own way. These world views are born out of a wider narrative of movements struggling against development with the proposal for fundamental change.

2.6. Community Economies, Plural Perspectives

Recent theoretical trends in post-development discourse have engaged in concepts like community economies to highlight ways in which communities afflicted by the disillusionment of development retain hope for a better future. Community economies emerged from the seminal work of J.K. Gibson-Graham (1996). The starting point of their research is the critical analysis of economic discourse concerning the capitalist economic narrative with the aim to deconstruct its universal and homogenous associations. Gibson-Graham (2005) argue that economies can be reframed through the analysis of the different ways in which people arrange their livelihoods and economic systems as ongoing sets of performative social relations. Importantly, community economies differ sharply from mainstream development which usually starts with the idea that if a community is seen as lacking in 'development', it requires capitalist input. Community economies begin by identifying local capacities rather than limitations, assets instead of needs and possibilities over constraints. A community economy becomes a space of negotiated interdependencies

in which local actors have agency to shape what development means to them, seeking alternatives to constructing their economy as they see it (Gibson-Graham, et al., 2017). Establishing an inclusive language and representation of economic difference opens an ethical and political space of decision making as people transform their own lives and local economies on their own terms for the betterment of people and planet.

Community economies views the economy as a diverse set of relations and practices that are inseparable from ecosystems. The relationship between working and living is key when it comes to framing community economies and the way in which we act upon this relationship in human and nonhuman ecological relations of survival. 'Community' in this sense "refers to the active ongoing negotiation of interdependence with all life forms, human and nonhuman", while 'economy' refers "to all of the practices that allow us to survive and care for each other and the earth" (ibid, p. 5). In this light, community economies are embedded in, and dependent upon, environments that bring social, cultural and ecological concerns together in a caring, responsible and just approach.

What is clear with these transformative views is the intention "to re-politicize the debate on the much-needed socio-ecological transformation, affirming dissidence with the current world representations (i.e., green economy) and searching for alternative ones" (Kothari et al., 2014, p.366). Speaking about how different realities and world views should inform development, Escobar (2018) sees the need to move away from development as a Western dominated ideology and a form of cultural imperialism toward a more nuanced locally contextualised process rooted in the agency of communities who identify their own possibilities, goals and practices. In short, community centred small-scale initiatives are key to transforming ways of knowing, living and being.

2.7.   Chapter Summary

Based on the UN's conceptualisation of sustainable development, the SDGs share a common blueprint for peace and prosperity for people and the planet, now and into the future. The UN emphasises the rights of Indigenous peoples to determine and develop priorities and strategies for exercising their right to development, a focus considered paramount for improving and ensuring the health and well-being of Indigenous peoples. Yet the absence of culture from the widely accepted pillars of the SDGs - the economic, social and environmental

dimensions – means that Indigenous voices and conceptions of development are largely underrepresented. As seen through post-development thinking, community economies offer potential insights to the sustainable development framework to accommodate a more inclusive space for Indigenous approaches to development, in an attempt to truly transform the world toward a pluriverse – a world where many worlds fit.

Chapter 3 looks more closely at food security and how this has been understood since the 1970s through the food security framework. The focus then moves to food insecurity within a developed country context noting Indigenous communities are at greater risk of food insecurity and thus an increasing development concern.

Chapter 3: Conceptualising Food Security

> The number of people suffering from hunger has increased over the last three years, as well as the number of people suffering from obesity. … Public policies that promote healthy diets are urgently needed to address people's food choices. We cannot continue to blame the mother if her child is obese. Overweight and obesity are a public, not a private issue: governments should implement policies and programs aimed at providing healthy, nutritious and affordable food for everyone … SDG-2 and zero hunger are not just about feeding people, but nourishing them with healthy food seeking a healthy life… (Statement by FAO Director-General José Graziano da Silva to the United Nations General Assembly (UNGA), UN Headquarters, New York, 19 February 2019).

3.1.   Introduction

A sense of urgency to transform global food systems[9] formed the backdrop to da Silva's address to the UNGA. In the context of SDG2 which aims to end hunger, all forms of malnutrition, as well as the development of sustainable agriculture, a fundamental shift in the way and where food is produced requires consideration. According to da Silva (2019), ensuring a food secure context can be maintained with access to healthy and affordable food in the 2030 Agenda plays a vital role "… in this much-needed transformation of our food systems …", particularly if food security and sustainable agriculture are to be achieved, improved and promoted. This would suggest a re-think in implementing alternative ways in food production and the sustainable use of resources are of urgent need.

This chapter is presented in five sections. Section 3.2 provides an overview of food security tracing the evolution of the concept since the 1970s. This leads to a brief discussion on the food security framework in section 3.3. This framework provides a useful way to conceptualise the increasing concern of food insecurity, as well as to contextualise the challenges and experiences people face who are food insecure, which will be discussed in section 3.4. Section 3.5 looks at food insecurity as an ever present and growing concern within the developed world noting that food security is far from reach for many, and impacts on, Indigenous communities. The concluding section calls for the recognition and

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[9] Food systems refers to all elements and activities that relate to production, processing, distribution, preparation, and consumption of food (see Gliessman, (2014); Willett et al., (2019) for further discussions on food systems.

fundamental importance of culture for Indigenous peoples ensuring their food security and thus sustainable development.

3.2. Food Security Evolution and Development

The concept of food security has evolved as a key driver in the development debate with contested, albeit important, historical narratives between policymakers, academics and development practitioners alike. Although concerns about food security can be traced back to 1943 (Napoli, De Muro & Mazziotta, 2011), issues related to food security came more in line with development thinking in the 1970s at a time of global food crisis. This period of time represented a conventional benchmark of thinking about the global food system with increasing agricultural production as a main policy prescription (Birchi & De Muro, 2016; Falcon et al., 1987; Lang & Barling, 2012). With the onset of famine, hunger and food crisis, concerns about food security recognised the critical needs of vulnerable and affected people (Shaw, 2007 cited in Peng & Berry, 2019). This coincided with the extreme volatility of agricultural commodity prices and turbulence in stock and energy markets (Peng & Berry, 2019).

Over time, the analysis of food security has changed. Maxwell (1996) identified three overlapping shifts in the thinking about food security: (1) from the global and the national to the household and individual level; (2) from a food first perspective to a livelihood perspective; and (3) from objective indicators to subjective perception. The three shifts imply a shift from modes of production to modes of consumption, hence a shift of focus from supply to access. I devised Table 1 based on an extensive review of food security literature. This table outlines these changing perceptions and policy approaches in food security thinking and the respected definitions that have evolved throughout the decades from the 1970s. Since the turn of the millennium, the catalyst for action was due to the impact of climate change posing additional severe risks to food security and the uneven impact this had on the global agriculture sector. Small agricultural producers and vulnerable populations became a focus of attention in Millennium Development Goal 1, namely, reducing the proportion and the number of people who suffer from hunger and malnutrition by half by 2015 became a key driver as set out by the World Summit on Food Security in 2009. Mobilising private sector engagement has been viewed as a vehicle to achieve food security in light of soaring food prices since 2008.

	Catalyst for action/policy implications	Definitions
1970s	- Balance or imbalance between population and food availability - Malthusian approach (Birchi & De Muro, 2016; Slater et al.). - Global food crisis of 1972-74 leads to agricultural commodity price hikes (Peng & Berry, 2019). - Production & price stability required.	… availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices (UN, 1974).
1980s	- Entitlement failure – personal and exchange endowments. - At risk populations unable to access commodities such as food (Sen, 1981). - Chronic and transitory food insecurity (Napoli, De Muro & Mazziotta, 2011). - Poverty alleviation critical determinant to improve access to food.	... ensure that all people at all times have both physical and economic access to the basic food they need. Food security should have three specific aims, namely ensuring production of adequate food supplies; maximizing stability in the flow of supplies; and securing access to available supplies on the part of those who need them (FAO, 1983). Access of all people at all times to enough food for an active, healthy life (World Bank, 1986).
1990s	- Social security & human rights to adequate and sufficient food. - Freedom from hunger and malnutrition. - Nutrition security emerges. - Food-based programmes – emphasis on nutrition & agriculture sectors (Burchi et al.) and public health (Bouis, 2000).	When all people, all of the time, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active life and healthy life (FAO, 1996).
2000s	- Urban food security emerging challenge exacerbated by climate change (Tacoli, 2013). - global food prices crisis of 2007–08. - Issues of access and distribution and inadequate investment in small-scale agriculture (De Schutter, 2014). - Addressing poverty through food stability becomes key. - Rights to food movements (Eide, 1996). - Food Sustainability and the role of the private sector (UN Global Compact Office, 2008).	The 1990s definition is reaffirmed and extended by adding the four dimensions of food security: availability, access, utility and stability. The nutritional dimension is integral to the concept of food security (Committee on World Food Security, 2009).

Table 1: Shifts in Food Security Thinking and Definitions From the 1970s (Source: Author).

3.3. Conceptual Framework of Food Security

Over the years, the term food security has maintained a prominent spot in development literature reflecting a contested battlefield that is "confusingly multifaceted" (Benton, 2016, p. 1506), a heavily "debated and shifting term" (Dowler & O'Connor, 2012, p.45), a complex sustainable development issue (Stevenson, 2013), yet a "flexible concept" with approximately 200 definitions in published writings over the past three decades (Maxwell & Smith, 1992 cited in Peng & Berry, 2019, p.1). Lang, Barling & Caraher, (2009) contend criteria to judge the shifting terms has become an ongoing problem for policy and gives sway to sensitivities of

food failure due to poverty. In all of its multiplicity, diversity and enduring development, "… food security has become, it seems, a cornucopia of ideas" (Maxwell, 1996, p.155). Within this multifarious complexity, the most widely accepted definition of food security was launched at the World Food Summit by the FAO in 1996. Food security occurs:

> … when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (p.1).

This definition also informs and helps conceptualise food security as a framework built upon four dimensions as described in Table 2. Under this framework, a food secure environment exists when food is sufficiently available with adequate access to quality and types of foods (balance of protein, energy and micro-nutrients), appropriate health care and food safety practices are met, supported by the fourth dimension of stability reducing the risks of adverse effects on the three dimensions – food availability, access and utility. The diverse set of institutions, technologies and practices that manage the way food is produced, marketed, processed, transported, accessed and consumed are important drivers of food security. In short, the food systems in which these processes play out are of paramount importance for achieving food security.

Availability	This means sufficient quantities of food are physically available on a consistent basis; this is determined by production, trade and stores of food.
Accessibility	This is about having sufficient resources to obtain appropriate foods for a nutritious diet; sufficient economic and physical access to food for activity and health. This is determined by resource allocation and access to decision-making power for example.
Utility	This refers to the appropriate use of food based on knowledge of basic nutrition and care, safe food practices and preparation, as well as adequate water and sanitation.
Stability	This refers to the fact the each of the above mentioned points require permanency to ensure a food secure context can be maintained.

Table 2: Four Dimensions of Food Security (Sources: FAO, 2009; Peng & Berry, 2019; Stevenson, 2013; Tiffin, 2014).

3.4. Food Insecurity

> The problems of hunger and food insecurity have global dimensions and are likely to persist, and even increase dramatically in some regions, unless urgent, determined and concerted action is taken … (FAO, 1996, par.3.).

This statement from the Rome Declaration on World Food Security (World Food Summit, 1996) pledged with heightened ambition a persistent and ongoing effort is required to eliminate hunger in all countries by reducing the number of malnourished people in half (800 million throughout the world at that time), by no later than 2015. Despite the ambitious efforts since this pledge was made the number of people facing chronic food deprivation is on the rise (World Health Organisation, 2018). The most recent State of Food Security and Nutrition in the World released in 2019 by FAO suggests approximately two billion people worldwide experience moderate to severe food insecurity.

Discussions about the best approaches to food security often focus on the current industrial, agricultural model characterised by high-technology approaches with the objective of increasing productivity and efficiency. Although this approach has succeeded in producing large volumes of food, problems of hunger, degradation of land, unhealthy ecosystems, and lack of accessibility to food persist (Gliesmann, 2016; Lang, Barling & Caraher, 2009). The latest report of the International Panel of Experts on Sustainable Food Systems (IPES-Food) published in 2016, led by Olivier DeSchutter, a former United Nations Special Rapporteur on the right to food, summed up the state of the current global food system:

> Today's food and farming systems have succeeded in supplying large volumes of foods to global markets, but they are generating negative outcomes on multiple fronts: widespread degradation of land, water and ecosystems; high GHG emissions; biodiversity losses; persistent hunger and micro-nutrient deficiencies along-side the rapid rise of obesity and diet-related diseases; and livelihood stresses for farmers around the world (p.1).

Addressing the challenges of food insecurity features prominently in SDG2. This goal focuses on an integrated approach to food security addressing all forms of hunger and malnutrition, the resilience of food systems and the development of sustainable agriculture. Within SDG2 target 2.1 aims to end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, to safe, nutritious and sufficient food all year round. To meet

this target an improved understanding of the constraints of the dominant food and farming systems and their relationship to food security is necessary.

3.4.1. Determinants of food insecurity and consequences of food poverty

The determinants of food insecurity are important considerations when contextualising response or actions and identifying outcomes. Food insecurity - the inverse to food security – impacts many households worldwide and can be described when access to safe and nutritionally adequate foods, or the ability to acquire such foods, in culturally appropriate and socially accepted ways, is constrained, limited or uncertain (Carter, Lanumata, Kruse, & Gorton, 2010; Dobson, Dowler & Turner, 2001; Parnell, & Gray, 2014). Food insecurity can be considered at a country, community, household or individual level, however, the term hunger is more in line with food insecurity experienced at the individual and household level (Tarasuk, 2001).

While the prevalence of household food insecurity varies between and within countries, studies of people who suffer from food insecurity have consistently found that it is related to limited household resources, insufficient income and poor socioeconomic status (Cook & Frank, 2008; O'Brien, 2014; Riches & Silvasti, 2014; Tacoli, 2013). Food insecurity correlates with food poverty and the failing access to commodity bundles in the way of food access, or what Sen (1981) refers to as entitlement failures to personal and exchange endowments. People who are affected by failed entitlements tend to have negative health outcomes, like nutritionally inadequate diets, leading to malnutrition, alongside other forms of socio-economic inequalities often leaving people in food insecure circumstances, socially excluded and/or marginalised (Graham et al., 2018). In this sense, food poverty amplifies the risk of, and risks from, malnutrition, which in turn, exacerbates and perpetuates poverty (Swinburn et al., 2019). People who are poor are more likely to be affected by different forms of malnutrition.

Hunger describes the subjective feeling of uneasy and painful sensation caused by the recurrent lack of food, with temporary periods of hunger can be debilitating leading to longer term human growth and development problems (UN Hunger Task Force, 2004; Narayan, Walker & Trathen, 2009). Malnutrition is caused by deficiencies, excesses or imbalances in energy, protein and nutrients, including unbalanced diets leading to diseases of over-nutrition

and obesity. Malnutrition can therefore be seen as the inability of an individual to consume enough or the right food sufficient to meet nutritionally adequate dietary requirements.

Hunger or malnutrition caused by food insecurity is a condition resulting from economic and social constraints hindering access to food. In this way, actions to address poverty are vital to improve health and reduce health and social inequities. Thus as Lang et al., (2009) argue, the approach in food policy has failed to integrate public health, environmental concerns and social inequalities into the wider frame of food and nutrition security. Tacoli (2013) adds further that hunger, malnutrition and poverty become more apparent due to impacts of climate variability and weather extremes, insufficient-income, urban food security neglect and changing dietary patterns. Compounded by what the Lancet Commission states, the international community is facing a global syndemic of undernutrition, obesity and climate change (Swinburn et al., 2019), suggests achieving food security and improved nutrition for all people at all times, advances an ever pressing need for changes in food, income, social and health policy.

3.5. Food Insecurity as a Developed Country Concern

> The fact that not even the richest countries in the world can guarantee food security for all their citizens indicates that food policy as well as social and public policy is badly failing (Riches & Silvasti, 2014, p.5).

When we think about issues of hunger, worst-case scenario being famine, we often see this to be an issue facing developing countries. While the nature and magnitude of food insecurity in developing countries is not the same as that experienced in developed nations, a growing number of disadvantaged groups experience the multiple impacts of poverty related problems of food access, rising inequality, welfare reform, high housing and expensive living costs (Graham et al., 2019; Riches, 1997; Riches & Silvasti, 2014). Despite the Universal Declaration of Human Rights[10] ratified over 70 years ago (many of which are labelled today as 'developed', 'wealthy', 'rich', 'high-income countries'), proclaiming "… the inalienable entitlements of all people, at all times, and in all places …" (UNDHR, 2015, p. v), food insecurity rates have increased suggesting current social safety nets are inadequate and entitlements or

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[10] Article 25 (1): Everyone has the right to a standard of living adequate for the health and well-being himself and of his family, including food, clothing, housing, medical care and necessary social services, and the right to security in the event of unemployment, sickness disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

rights to food are scarce (Arcuri et al., 2016; Pollard & Booth, 2019; Sen, 1981). If developed countries are not able to guarantee food security to their citizens, it's increasing prevalence is a major food, social and economic policy issue and a failure of governments to meet its right to food obligations (De Schutter, 2014; Eide, 1996).

3.5.1. Defining food insecurity in developed countries

The problem of food insecurity in developed countries is inherently elusive and largely unreported, as not all countries adopt food insecurity monitoring or food security policies[11] (Graham et al, 2019; Pollard & Booth, 2019). For the sake of context, food insecurity prevalence is unexpectedly high in many developed countries. For example, in the United States food insecurity and hunger are referred to as conditions of resource constraints or poverty related conditions (Cook & Frank, 2008), and in Canada the primary indicator used to monitor food security is the assessment on food bank and charity usage (Tarasuk, 2001). According to estimates, in the United States food insecurity is faced by approximately 15% or 50 million people. Food insecurity in Australia affects 21.7% of households or approximately 4.6 million people, and Japan it challenges 15.7% or roughly 19.8 million people[12]. In 2007/8 in Canada it was experienced by 7.7% or approximately 1.9 million people, and in 2010 it was estimated that food insecurity affected 8.7% or 43.6 million people in the European Union (Gentilini cited in Pollard & Booth, 2019). Over 40% of households in Aotearoa experienced forms of food insecurity in 2008/2009 (Ministry of Health, 2012).

3.5.2. Malnutrition and food poverty in developed countries

The well-established interrelationship between food insecurity, food poverty and ill health status provides reason for concern about the nature and extent of hunger, malnutrition and food insecurity in developed countries. As such, research on food insecurity and food poverty has gained currency as a growing public health and well-being concern with far reaching social, economic and environmental implications (Allen, 2009; Lang et al., 2009; Naylor, 2014; Pollard & Booth, 2019; Tarasuk, 2001; Tiffen, 2014; Utter et al., 2017). Evidence suggests the risk of obesity in the developed world affects people who experience food insecurity compared to the rest of the population (Burns, 2004). Changes in the dietary patterns include

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[11] Some countries employ proxy measures like national poverty lines based on median incomes, which do not necessarily reflect an individual or household experiencing insecure access to sufficient and adequate food.
[12] Both Australia and Japan are based on 50-60% of the national poverty line in 2012.

increasing consumption of cheap ultra-processed foods that are energy dense, high in fat and sugar. People with limited resources will select these foods over vegetables and fruit to satisfy energy needs. Obesity, in turn, is associated with chronic diseases like diabetes, cardiovascular disease, cancer and overall poor health status. As food insecurity occurs within the context of poverty and poor health with limited entitlements to access sufficient and nutritious food, it is very cheap to become obese (Burns, 2004; Parnell & Smith, 2008; Rush & Rusk, 2009).

3.5.3. Communities at risk of food insecurity in developed countries

The socio-demographic determinants of food insecurity have been documented in this chapter noting the wide range of communities facing hunger, malnutrition and food insecurity[13]. Although Indigenous peoples across the world possess distinct and unique histories, circumstances, beliefs, and diets, there are some common characteristics that Indigenous people experience with food insecurity. At six per cent of the world's population, they make up 15 per cent of the world's poorest people. In this light, Indigenous communities are the poorest of the poor and most vulnerable of the world's people (Taonui, 2017). The prevalence of food insecurity is consistently found to be higher for Indigenous communities than other population groups (McKerchar et al., 2014; Moeke-Pickering et al., 2015; Raschke & Cheema, 2008; Stevenson, 2013; Temple & Russell, 2018).

Presented in the literature is the disparity between Indigenous and non-Indigenous in food security with the greater likelihood of higher rates of obesity related illnesses, thus poor health outcomes for Indigenous communities (Bidwell, 2009; Carter et al., 2010; Jones et al., 2014; McKerchar et al., 2014; Tarasuk et al., 2019; Theodore et al., 2015). Research from Australia shows that levels of food insecurity experienced by Aboriginal and Torres Strait Islanders is approximately 22% compared to 4% of non-Indigenous Australians (Temple & Russell, 2018). In Aotearoa increasing prevalence of food insecurity in Māori households was observed between 1997 and 2008/09 (Ministry of Health, 2012). A recent health survey measuring household food insecurity in Aotearoa found food insecurity more prevalent among children of Māori ethnicity (Ministry of Health, 2019). Food insecurity among many Indigenous communities is therefore of increasing importance given persisting inequalities in

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[13] Addressing the broader groups who experience food insecurity is beyond the scope of this report.

socioeconomic and health outcomes. With a heightened level of urgency to address food insecurity made implicit in SDG2, along with target 2.1 identifying poor people in vulnerable situations, ending poverty and hunger in all their forms is of particular importance concerning vulnerable groups, amongst which are Indigenous peoples. The role of culture for food security is therefore crucial and depends on ensuring cultural rights and access for Indigenous peoples.

3.6. Culture, Development and Food Security

In 2006, a consortium of Indigenous organisations and communities and representatives from various United Nations organisations formed the 2nd Global Consultation on the Right to Food, Food Security and Food Sovereignty for Indigenous Peoples. The focus of this consultation was to develop a set of cultural indicators for food security, food sovereignty and sustainable development and create a framework of underlying principles, criteria and an understanding of development in the context of cultural indicators. Consensus of the participants agreed on the following term:

> Development with identity is the project of life of the Indigenous Peoples based on their own logic and worldview. It is the natural growth of Indigenous Peoples, of their flora and of their fauna based on principles of self-determination in relation to land, territories, and natural resources. It is also respect for their individual and collective rights. It is the welfare and security of our peoples (2006, p. 3).

In essence, the intention of the indicators and the underlying principles is to guide and assess criteria within a "framework that is rights-based, fully participatory and respectful of the cultural rights and self-determination of the [I]ndigenous peoples who are involved and affected" (ibid, 2006, p.3-4). In this context, culturally appropriate ways of doing development are elevated as part of the economic, social and environmental dimensions of the SDG framework.

3.6.1. Culture as a key determinant for food security

Understanding the close and respectful interconnection between culture and food systems for Indigenous peoples, and their healthy interactions between ecosystems and the spiritual worlds, culture and cultural knowledge is an important determinant for food security. Land is both an agricultural and sacred space where both human and nonhuman relations (land,

water, animals, plants), flourish within a symbiotic, inter-connected and nurturing ecosystem (Durie, 1994, 1998; Watene, 2016). Cultural knowledge of this relationship is a key determinant of Indigenous health, including the types of food and the practices of procurement, preparation, sharing and eating that are important to the maintenance and expression of Indigenous ways of knowing, living and being (Coté, 2016; Hond et al., 2019; Huambachano, 2019). Indigenous people are intimately connected with food and farming through descent and kinship relationships, ancestral traditions, cosmologies and oral histories. These practices represent important aspects of cultural identity because food is indispensable to indigenous peoples' lives (FAO, 2009).

A study on the role of traditional foods in Aotearoa found that Māori food security "… encourages Māori communities to revive traditional kai [food] access and use, become more knowledgeable about nutrition and health, and to revitalise wellbeing" (Moeke-Pickering et al., 2015, p.38). In Canada, Power (2008), found that traditional food (also known as country food) has "… significant symbolic and spiritual value, and is central to personal identity and the maintenance of culture" (p.96). In this sense Indigenous peoples are Inheritors of cumulative and diverse bodies of knowledge and practices centred on the nurturing of biodiversity and encapsulated in distinct cultural principles and values (McGregor, 2004; Watene, 2015; White, n.d.). Traditional food practices including food sharing, food skills, and preferences, are key components of cultural food security, thus critical when exploring food security from an Indigenous perspective. This is especially important, if the United Nations FAO food security framework and SDG2 are to be effective and support inclusive strategies for improving food availability, accessibility, utility and stability among Indigenous communities, to healthy, nutritious and culturally appropriate foods. In the context of Indigenous health and well-being, and Indigenous perceptions on food security, a sense of urgency to address and endorse culture as a key determinant of food security, remains a high priority.

3.7. Chapter Summary

To have physical, social and economic access to quality, safe and sufficient nutritious food that meets people's dietary needs and food preferences for active and healthy lives, would mean that food security is met. The concept of food security has shifted in definition since the early 1970s. Since then, food security has been a hotbed for debate in development

literature, particularly in reference to economic and climatic shocks. A food secure environment occurs when the four dimensions of food security are met: the *availability* of adequate food, the *accessibility* of food people need, the *utility* of healthy and nutritious food and *stability* of food access at all times. When these dimensions are disrupted by insufficient purchasing power, low incomes and social exclusion, food insecurity occurs resulting in inadequate dietary intakes, malnourishment and the development of life-threatening disease. With rising levels of poverty and inequality in developed countries, food insecurity has gained currency as a growing phenomenon and a major policy issue.

Concurrently, an emerging body of literature documents its prevalence is significantly higher for Indigenous populations. Indigenous concepts of food security extend beyond the dominant discourse and emphasise a more integrated, holistic meaning that is integral with cultural traditions, practices and knowledges. The priority for endorsing culture as a key dimension is therefore necessary and is key for Indigenous values, knowledge and approaches to food production that are aligned with food security and sustainable agriculture, as conceptualised by SDG2. This will become apparent in Chapter 5. Essentially, cultural values and practices in relation to food production and consumption enhance Indigenous health and well-being.

The following chapter explores the methodology used for this research. It looks at qualitative methods as an approach and considers principles involved when conducting research with Indigenous peoples. Using the Te Ara Tika Māori ethical framework provides guidance for ethical research with Māori communities.

Chapter 4: Methodology

4.1. Introduction

Qualitative research attempts to understand people's everyday realities and how the social world is interpreted, understood and experienced. Qualitative research methods can be understood as the purposeful way in which social researchers acquire knowledge (the theoretical, analytical and interpretive approaches as to how research should proceed) that informs worldviews and guides research methods (the techniques for gathering information) in the attempt to explain social discourse, relations and institutions (Smith, 1999; Smith et al., 2016). Qualitative research methodologies seek to understand the connection between knowledge creation and knowledge production, an essential requirement in learning and understanding a situated activity that locates the researcher "in a reflexive discourse constantly in search of an open-ended, subversive, multivoiced epistemology" (Lather, 2007, p. X-X1). It is appropriate for this study to engage a qualitative research approach to gain insights into people's attitudes, interpretations, behaviours, value systems, concerns, motivations, aspirations, culture or lifestyle (O'Leary, 2017).

This chapter is presented in five sections. Section 4.2 contextualises this chapter with an overview of common Indigenous ways of knowing, living and being that are inseparable from a discussion on Indigenous research principles. Section 4.3 frames an argument concerning Māori research principles noting influences of Te Tiriti o Waitangi (Treaty of Waitangi signed between Māori and British Crown representatives in 1840), tikanga Māori, the philosophical base of mātauranga (Māori knowledge systems) and Western ethical principles. The essence of these principles are captured in what is known as Te Ara Tika Māori ethical framework that guides and informs research practice within Māori community settings. Alignment is made between these principles and ideas from the post-development agenda, noting that alternatives to doing development are possible. Section 4.4 briefly outlines the case study by way of participant selection, the method of data generation and the research ethics. Section 4.5 outlines the framework acknowledging four Māori cultural principles, in this case whakapapa, tika, manaakitanga and mana, and identifies how these principles implicate positionality, reflexivity and subjectivity in the research process. Applying the framework to this research project provides a means for non-Māori to engage Māori research principles that responds to the challenge of how to do ethical research in Aotearoa that is culturally

acceptable, relevant and significant to tangata whenua (people of the land). Kanohi ki te kanohi (face-to-face) meetings through case study visits provide insights into personal experience/narratives and life stories in terms of how Māori perceive food security and sustainable agriculture. This supports and adds vibrancy to the research, legitimises Indigenous voices and opens opportunities for new knowledge to be generated and shared with the aim that research outcomes benefits those who are researched.

4.2.   Qualitative Methodology and Indigenous Research Principles

While great diversity exists among Indigenous peoples, there are certain commonalities with Indigenous ways of knowing, living and being that implicate research principles applicable in qualitative research practice. Grounded in a common origin, history and future (Watene and Yap, 2015), a key principle for Indigenous peoples is that research must be cognizant with cultural norms, values, beliefs and rights to self-determination (Walter, 2016). The essence of being Indigenous is affirmed in this grounding in relation to Indigenous concepts such as spirituality, identity, sovereignty, land, tradition, literacy and language which bind ancient genealogies with contemporary realities (Smith et al., 2016). Shaped over time and continuously evolving, Indigenous knowledge arises from these concepts, which form a common philosophical base as a result of the spiritual and physical symbioses with the natural and metaphysical world (McGregor, 2004; Smith, 1999). A commitment to, and acknowledgement of, Indigenous ways of knowing, living and being – interrelationships between people, the natural world and all things dependent on each other - as a dynamic and evolving body of knowledge, is therefore fundamental in understanding Indigenous perspectives and establishing a researcher-researched relationship.

4.2.1.   Indigenous ways of knowing, living and being

Indigenous paradigms and perspectives are fundamentally important for researchers to consider when conducting research with Indigenous communities, as they guide decisions and actions and provide the appropriate analytical and interpretative frameworks (Denzin et al., 2008). As Smith et al. (2016, p.137) asserts:

> Indigenous knowledge can be understood as knowledge that is not simply 'old' and irrelevant but knowledge and its applications that have had meaning for

generations, that have evolved over generations and that are still applied and adapted to contemporary conditions and have meaning for communities.

The co-existence of academic and community-based knowledge/s touch on the inseparability, as well as the plurality, of epistemologies and methodologies within Indigenous qualitative research. Knowledge is narrated through a variety of mediums, such as songs and stories, as oracles and visions imbue not only cultural nuances, but tap into knowledge creation and production (McGregor, 2004). Qualitative research can therefore unlock the theoretical, analytical and interpretive link between the ways in which knowledge is defined and understood within Indigenous settings and the practices of inquiry that are used by those who research and conduct scholarly work (Smith et al., 2016). Hence qualitative research involving Indigenous communities engages methodological techniques and practices to explore the richness of Indigenous communities' ways of knowing, living and being with the objective to build "compelling arguments about *how things work in particular contexts"* (Mason, 2002 p.1 emphasis in original).

4.2.2. Custodians of Indigenous knowledge and reciprocal relationships

The idea of who controls Indigenous knowledge surfaces as a key point of inquiry when conducting research with Indigenous communities. Battiste (2008) contends the issue of control or decision making over Indigenous knowledge is the single most important principle and that ownership prescribes a custodial relationship with the knowledge. Battiste and Henderson (cited in Battiste, 2008) assert further that if non-Indigenous people should choose to enter any collaborative engagement with Indigenous peoples, the research should empower and benefit Indigenous and cultures, not just researchers, [and] their educational institutions. Denzin et al., (2008) support this argument suggesting qualitative research engage methods critically for explicit social justice purposes, and value the transformation of Indigenous, subjugated knowledges that fold "theory, epistemology, methodology, praxis into strategies of resistance unique to each Indigenous community" (p. 10). These actions infer recognition of both custodians of knowledge and awareness of responsibilities for those in receipt of this knowledge. Thus, understanding the rights and responsibilities of Indigenous knowledge creation is paramount for researchers, as well as their role in disseminating knowledge ensuring outcomes of research benefits those who are researched.

4.3. Qualitative Methodology and Māori Research Principles

Māori research principles are firmly embedded in tikanga Māori. For Māori, ethics is about 'tikanga'- for tikanga reflects values and beliefs and the way in which Māori view the world (Mead, 2003). As the founding document of Aotearoa, Te Tiriti o Waitangi established the terms and conditions between Māori and the Crown, which upholds the principles of partnership, participation and protection. These principles provide a foundation for identifying Māori ethical issues in terms of rights, roles and responsibilities of researchers who study Māori communities and the contribution that research makes towards those who are researched, while an attempt to address inequalities. As Hudson et al. (2010) assert, all research in Aotearoa is of interest to Māori, and research which includes Māori is of considerable importance to Māori.

4.3.1. Te Ara Tika Māori ethical framework

Te Ara Tika is an ethical framework based on the application of tikanga Māori, the philosophical base of mātauranga Māori and Western ethical principles. The framework integrates understanding from Te Tiriti o Waitangi and cultural values and beliefs in relation to the field of matatika Māori (Māori research ethics). Values are based on Māori cultural principles, in this case whakapapa, tika, manaakitanga and mana. While each element is unique, it is important to see them as interconnected and closely linked to one another. Therefore, when all tikanga are expressed together, they give rise to the cultural relevance and legitimacy of Māori ways of knowing, living and being. Figure 2 is a visual reminder of the interconnectedness of Te Ara Tika Māori Ethical Framework.
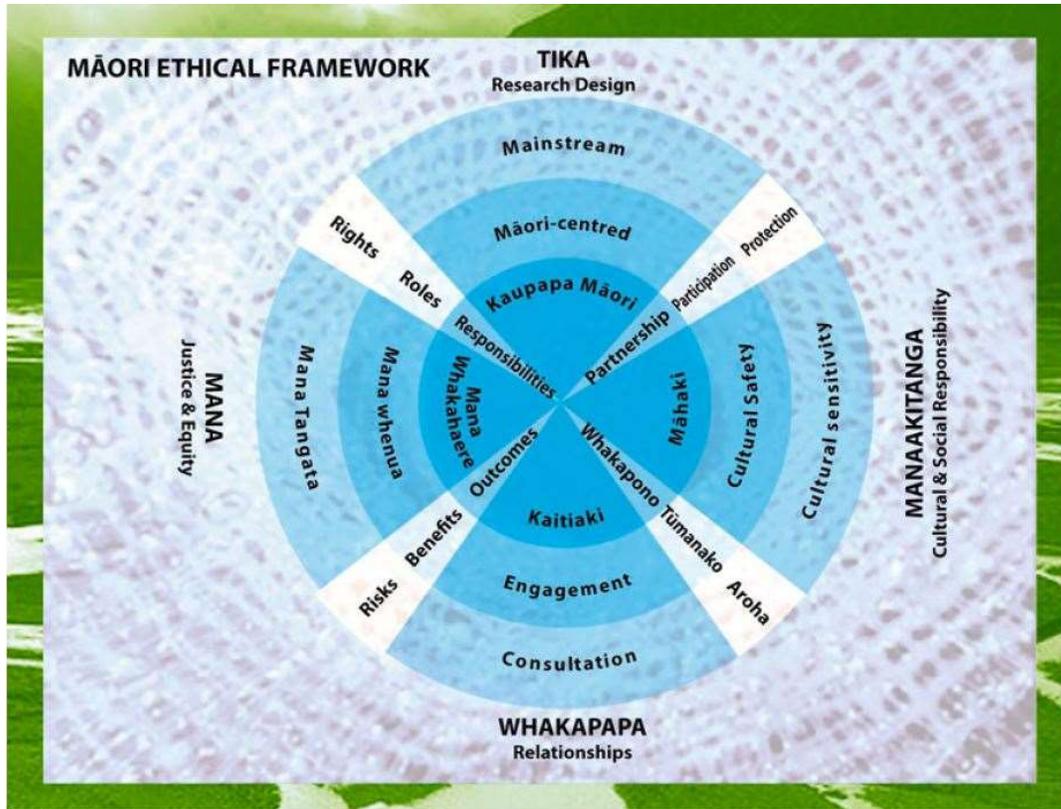
Figure 2: Te Ara Tika Māori Ethical Framework (Source: Hudson et al., 2010).

4.3.2. *Te Ara Tika, mātauranga Māori and a post-development agenda*

Since Te Ara Tika has been used in many research projects involving Māori communities, it may offer a decolonizing methodology (Smith, 2012) that is responsive to ethical concerns about Māori research and the ethical issues they encompass (Hudson, et al., 2010). Acknowledging the rights, roles and responsibilities each party has in the research process, Te Ara Tika addresses the dual principles of justice and reciprocity to ensure equitable benefit sharing of tangible research outcomes for Māori are achievable (Came, 2013). Engaging and applying Māori cultural principles implies not only a culturally sensitive and empathetic research approach, but a way to address development issues that are significant and make a difference for Māori (Hudson et al., 2010).

The orientation of the post-development agenda asserts the premise development has been misleading and sometimes destructive, and proposes that different ways of doing development are possible. Post-development thought and mātauranga Māori share a dissatisfaction with mainstream development, recognising Indigenous endeavours of

development as people-led, or as described by Maiava & King "what people are doing anyway" (2007, p.96). In this light Te Ara Tika can be viewed as an Indigenous process of development and a development approach that opens up wider discussions around the development discourse to include local cultural priorities and cultural well-being for Indigenous peoples as positive "conditions of possibility" (Gibson-Graham cited in McGregor 2009, p.1698) within the mainstream development gaze. A final assertion is that this framework alongside the post-development agenda sits within a different knowledge space and methodological approaches to research, yet provides a means in which culturally appropriate action and inclusion of different ways of knowing, living and being with a spirit of kotahitanga (collective unity and solidarity) can be undertaken.

4.4. Case Study Sources, Data Generation and Research Ethics: A Qualitative Approach

As a method of inquiry, qualitative research seeks to collect and generate data in natural settings or particular places, locations or sites – what is otherwise known as 'the field' – to study the people, communities and societies that reside there (Stewart-Withers et al,. 2014). A qualitative approach to doing research lends itself to a particular set of data sources and methods for generating data from those sources such as interviews, objects, events and texts, conversations, life stories and observations (Denzin et al,. 2008; Mason, 2002: O'Leary, 2017; Stewart-Withers, et al. 2014).

Rather than seeing data as existing in a collectable state, the term data generation encapsulates a much wider range of relationships between the social world, researcher and data sources. Data generation questions how best to generate data from selected sources while simultaneously being active in constructing knowledge (Mason, 2002). With an interest in exploring people's individual and collective knowledge and understandings, this research takes an interpretivist approach viewing people and their interpretations, perceptions, meanings and understandings of the social world as the primary source of data (ibid). An interpretivist approach is concerned with people's everyday realities in the production and reproduction of continuing activities. Blaikie (2000) suggests that:

> [E]veryday reality consists of meanings and interpretations given by the social actors to their actions, other people's actions, social situations, natural and humanly created objects. In short, in order to negotiate their way around their world and make sense of it, social actors have to interpret their activities

together, and it is these meanings, embedded in language that constitute their social reality (p.115).

Choosing who to select as research participants is an important part of qualitative research which has direct implications for whether and how generalisations can be made. Purposive snowballing is a strategic form of selecting data sources to research on the basis of their relevance to the research and the argument or explanation been developed (Mason, 2002). In this study I used this strategy to identify, select and gain access to relevant data sources in order to generate data about Māori communities engaged in mahinga and māra kai and their perceptions on food security.

Once I was clear my approach to research would involve a case study, I made contact with Nick Roskruge, a key informant at Massey University well known in the field of mahinga and māra kai. Highly regarded in the horticultural/agricultural sector, Nick is Chair of Tahuri Whenua (National Māori Vegetable Growers' Collective) and descends from Te Atiawa/Ngati Porou Iwi. It was important for me to meet Nick and discuss my research motivations, purpose and make links to groups engaged in mahinga and māra kai. Over a number of years, Nick has made very close and long-standing relationships with Māori communities engaged in mahinga and māra kai over the lower/central North Island, which meant that he had built a significant level of trust with multiple community and iwi-based initiatives. I met Nick on several occasions conversing about the important role kai plays in rejuvenating culture and community development. I found his stories about grassroots food initiatives in accordance with tikanga and Māori knowledge inspiring thus reassuring my motivation to proceed with this research project. Kōrero (narrative/to speak) with Nick also provided insights about each group/organisation, and which ones would be suitable to this research project.

Due to his recommendations, I undertook two visits to a community-based Māori/whānau initiative called Ngā Hau e Wha Maara Kai in Taumarunui, central North Island. While accompanied with Nick made for relaxed introductions, it also made me feel more confident as manuhiri (guest). I also believe having Nick's support meant he could trust me as a non-Māori researcher, and this trust flowed on to the participants, legitimising my inquiry in the area of Māori perspectives of food security and sustainable agriculture. Travelling with Nick to and from Taumarunui provided insightful moments for reflective learning and

conversations to verify/confirm my interpretations and understandings about these perspectives – an invaluable time to 'digest' and make sense of my thoughts.

4.4.1   Research Ethics

This research received a low risk notification from Massey University Human Ethics Committee. To understand what it means to grow food at a community level and the extent to which Māori cultural values and practices are integrated, I undertook two case study visits to Ngā Hau e Wha in September and December 2019. Consent to engage was verbally initiated stemming from a distinct Indigenous research methodology called kōrero with four community members. To satisfy Massey University research requirements, written consent was provided on the second visit. Initially concerned with establishing connections, discussions allowed for kahoni ki te kahoni kōrero with naturally occurring open-ended discussions covering topics associated with the research. By establishing trust and relationships, the researcher fits in with the commitments of the participants as suggested by Kawharu (2019). With permission from the participants discussions were recorded followed by transcription. To ensure our kōrero were grounded in cultural etiquette, I shared a draft copy of the findings chapter for feedback and verification on a third visit in conjunction with the opening of the pātaka (seed, food and knowledge bank) at Ngā Hau e Wha in July 2020. Pseudonyms have been used in the findings chapter to respect confidentiality of the participants and are represented in letter form P, N, J, S. The following section contextualises the four Māori cultural principles of the Te Ara Tika and how they relate to this research project[14].

4.5.   Applying Te Ara Tika: Positionality, Subjectivity and Reflexivity

Since research in itself is a powerful intervention (Smith, 1999), then power dynamics and issues of privilege, authority and control are embedded in the researcher-researched relationship. Important to this study is engaging with concepts such as positionality and subjectivity and qualitative practices such as behaving reflexively (also see the seminal work of England, 1994; Rose, 1997). In doing qualitative research the researcher is inevitably part

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[14] While acknowledgment is made that Te Ara Tika is an incremental framework in terms of minimum, good and best practice standards, it is not the scope of this project to engage in-depth analysis and reflection of the level of standard in which this research falls within.

of knowledge construction. The social and cultural background of the researcher plays an influential role in the research process, bringing their own views, biases, prejudices and positions that impact the process of knowledge construction (Stewart-Withers, et al. 2014). Walter (2016) elaborates further, suggesting if the researcher does not understand their own social position and how this frames their research practice, then a significant potential for research harm exists.

4.5.1. Whakapapa

The whakapapa element of Te Ara Tika addresses the quality and nature of relationships and how these are developed and maintained in the research process. Establishing and maintaining respectful relationships is a means of gaining a greater insight and understanding of cultural realities. Reciprocity is at the heart of Māori/Indigenous realities as it refers to actions of gift giving and exchanges that cements the social capital of communities (Stewart-Withers et al. 2014). With kai been essential to all things Māori, I employed the culturally responsive act of koha (gift giving) in the form of gifting food. Koha in this sense provided five shared and valuable experiences. Providing food helped establish whakawhanaungatanga (establish relationships), and the cultural realities of what mahinga and māra kai means from a food security point of view. It acknowledged the cultural, economic, ecological, spiritual and political significance of kai to Māori culture. Offering food as koha reaffirmed the research topic of food security and sustainable agriculture of particular relevance for Māori and their rights to self-determine sufficient, healthy and culturally appropriate food for their whānau (family/extended family) and wider community. It reinforced the significance of cultural traditions within localised food production systems. Finally, sharing food was an expression of kaitiakitanga (the practice of guardianship), something we all could relate to by sharing social and cultural responsibilities as kaitiaki ō Papatūānuku (guardians of Earth Mother) as māra kai practitioners.

4.5.2. Tika

The tika element assesses the level of Māori worldviews that inform the research, the inclusion of Te Tiriti o Waitangi principles into the design, the level of Māori participation and the recruitment process. Although Māori were not included in the research design, this project is still of interest to Māori. It represents research that can address issues of food

security and sustainable agriculture pertaining to Māori, as well as draw attention to the fundamental role of tikanga Māori and centrality of culture has with Indigenous knowledge and approaches to sustainable food production. Further, research design applied through this framework enabled me to re-position Indigenous voices and knowledge at the centre of my inquiry, without stereotype or romanticism, and lean my understanding toward the concerns of food security and small-scale food production from a Māori-centered perspective. Bishop (2008) captures this view arguing that research must first and foremost represent and benefit the development of Indigenous communities been researched:

> self-determination intersects with the locus of power in the research setting. It concerns issues of initiation, benefits, representation, legitimacy, and accountability. Critical indigenous inquiry begins with the concerns of indigenous people. It is assessed in terms of the benefits it creates for them. The work must represent indigenous persons honestly, without distortion or stereotype, and the research should honor indigenous knowledge, customs, and rituals … should be accountable to indigenous persons (p. 112).

The tika element is concerned with representation, accountability and legitimacy and that research needs to create and support or make likely benefits for Māori.

4.5.3. Manaakitanga

The manaakitanga element assesses the level of cultural and social responsibility ensuring the mana of both parties involved in a relationship is upheld. Manaakitanga is grounded in working with the collective in a spirit of kotahitanga (collective unity and solidarity) (Mead, 2003). Important for this research and for me as a reflective researcher, was to think through various ideas and arguments raised by Smith (2013), especially in terms of behaving culturally safe and ethically. Being non-Māori, it was also important to reflect on my own cultural assumptions and idiosyncrasies and establish a level of cultural competency and understanding of Māori ways knowing, living and being. I spoke about past experiences developing and delivering an educational programme for Māori students based on tikanga and mātauranga Māori principles of mahinga and māra kai acknowledged my experience. Sharing my stories working in a cross-cultural environment and acknowledging the significance between kai and cultural health and well-being was also an expression of manaakitanga through acts of caring, supporting and uplifting one another – something we all celebrate as māra kai practitioners. Acknowledging my cultural sensitivity, safety and

māhaki (humility) toward tikanga Māori also strengthens my position as a researcher within Indigenous communities. My experience and understanding of Indigenous knowledge created a space to engage Māori worldviews in doing qualitative research within Indigenous community settings (Battise, 2008; Bishop, 2008; Denzin et al., 2008; Stewart-Withers et al. 2014), ensuring culturally safe and respectful protocols were adhered to.

4.5.4. Mana

The mana element refers to issues of custodians of knowledge and the collective rights to consent. Being mindful of issues concerned with power and authority, it is apparent that Māori are the best judges of how much a research project may impact upon their people. In the context of Te Tiriti o Waitangi, exercising mana makes explicit the wider social, cultural and ecological rights for Māori to engage te mahi māra (Māori gardening practice) as a "deliberate political act of resistance" (Hutchings, 2015, p.10), putting Māori who produce, distribute and consume food at the heart of decision making on issues relating to food. In this way, concerns with food [in]security for Indigenous peoples, alongside taking action to address these issues through this research, upholds and elevates the mana of the participants, which in turn uplifts my own (Mead, 2003). As Smith (2012) asserts this shows respect by exhibiting a willingness to listen, to be humble, to be cautious, to increase knowledge, to not trample over the mana of the people.

Since Te Ara Tika situates "a different knowledge space from traditional academic disciplines" (Smith et al., 2016, p.131), then conducting acceptable, accountable and responsible research within Māori community settings imbues different formations of knowledge creation and knowledge production, challenging traditional western ways of defining, accessing, constructing and understanding knowledge about Māori. Applying Te Ara Tika influenced the way I interacted and asked questions as a researcher which, in turn, provided a space to connect to personal experience/narratives, life stories and conversations from research participants. As a set of protocols and body of knowledge tikanga Māori can direct our stance to look at development from an Indigenous point of view that meets the needs of Indigenous peoples and their conceptions of food security and sustainable agriculture in the context of SDG2.

4.6. Chapter Summary

Te Ara Tika is motivated by and assessed based on the application of Māori cultural principles, in this case whakapapa, tika, manaakitanga and mana. While each element is unique, they are interconnected and embody a holistic approach to Indigenous research and Māori development. Values and processes that are assessed are not only culturally relevant and significant to Māori, but to Aotearoa as a whole. Te Ara Tika represents an important framework of Indigenous research based on a Māori world view. Applying Te Ara Tika, therefore, requires engaging Te Ao Māori (Māori world view), as much as this is possible for non-Māori, and active reflection on dominant cultural paradigms and their impact on Māori communities.

Post-development thinking includes an alternative conceptualisation of the very notion of what development means – that is the need to transform the practices of knowing, living and being that falls within the mainstream development gaze to include Māori developmental aspirations that can be enabled through a Māori world view. While Te Ara Tika is a framework for non-Māori to undertake research in Māori community settings, it sets a challenge for researchers to tread carefully when conducting research within Māori community settings. Engaging the framework with ethics in mind shows effectiveness to strengthen, enhance and uphold a shared mana and spirit of kotahitanga between Māori and pākehā (non- Māori, European) as Te Tiriti o Waitangi partners.

The following chapter presents findings from the case study on Ngā Hau e Wha Maara kai. The findings illustrate the challenges and benefits local food production has for members and the wider community in the small rural town of Taumarunui in the central North Island of Aotearoa New Zealand.

Chapter 5: Ngā Hau e Wha - Case Study Findings

Iti noa ana, he pito mata
It may be small, but it has the potential to grow and produce

5.1.   Introduction

The case study findings in this chapter address research question 1: *In what ways do Māori values and practices in relation to food production and consumption enhance health and well-being among Māori communities?* As a case study, a distinct Indigenous research methodology of informal and formal discussions known as kōrero was employed. Questions and discussions centred on the cultural significance of māra[15] kai within the broader context of the social, economic and environmental pillars of sustainable development. Positioning culture as a pillar draws attention to the unique way tikanga guides enduring relationships between people, the spiritual link to land and the kai it provides. This connection influences and shapes the transformative model to achieve food security and promote sustainable agriculture in the context of Indigenous peoples' inclusion in Sustainable Development Goal 2. What is apparent is by applying tikanga to māra and mahinga kai knowledge and practice contributes to a community food economy, thus highlighting the potential to grow and produce. The first section provides some background to the rural town of Taumarunui, noting that economic decline since the 1980s has had significant impacts on rural communities, and in particular for Māori. Attention then shifts to the case study Ngā Hau e Wha Maara Kai[16], and the experiences of a small number of residents who have responded to the development challenges by forming their own community food economy by producing fresh healthy kai to the wider community of Taumarunui and beyond.

5.2.   Background and Context

Nestled in the King Country and centrally located on State Highway 4 in the North Island, Taumarunui is cognizant of a rural town in heartland New Zealand (see Figure 3 for a visual representation). Taumarunui is approximately 4.25 hours drive from Te Whanganui a Tara (Wellington, capital city of Aotearoa), and approximately 3.25 hours from Tāmaki Makaurau (Auckland, the largest city). Like many small towns in rural areas, Taumarunui's economy is

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[15]Māra kai and Maara kai are used interchangeably meaning vegetable garden.
[16] Ngā Hau e Wha Maara Kai and Ngā Hau e Wha are used interchangeably.

dominated by agriculture, forestry and processing associated with these industries. Consistent with the neo-liberal turn that swept the country post 1984, Taumarunui felt the brunt of country-wide economic and institutional restructuring alongside dramatic changes in regional/local economies. The onset of declining employment opportunities in the agricultural sector, the withdrawal of public sector operations (railways workshop and roading infrastructural base) and services (hospital and school closures), weakened the economic base and social well-being of Taumarunui. As a result, Taumarunui experienced the impact of high unemployment with Māori particularly affected (Joseph et al., 2001).

Figure 3: Te Ika a Māui/North Island Aotearo New Zealand (Source: NewZealand History (n.d.).

To this day Taumarunui remains economically and demographically marginalised with employment opportunities within this rural community ambiguous and uncertain. Taumarunui has a population of 4,707, of which 2,463 identify as Māori (52 percent)[17] (Statistics New Zealand, 2018). Taumarunui continues to see an over representation of Māori as unemployed. According to the 2018 census, Māori unemployment was 10.7 percent compared to 7.4 percent total unemployed (*ibid*). Unemployment for Māori living in Taumarunui reflects the national data from the 2018/19 household economic survey (HES)

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[17] Estimated Māori population was 850,500 or 16.7 percent of national population at 30 June 2020 (Statistics New Zealand, 2020c).

suggesting the rates for Māori living in households with relative low income and in relative material hardship are higher compared with the national average (Statistics New Zealand, 2020a). High deprivation levels and poverty for Māori are therefore consistent with research by the Waikato District Health Board (DHB) which found 66 per cent of Taumarunui children live in conditions considered to be at the highest deprivation levels, compared with 25 percent in the Waikato DHB district overall (Nyika, 2017). The household economic survey on child poverty rates in April 2019 reported Māori had higher rates (23.3 percent) of children living in households that experience material hardship than the national average of 13.4 percent (Statistics New Zealand, 2020b). This draws attention to the relationship between socio-economic circumstances for Māori unemployment and a key determinant of low income households that cannot afford specific consumption items that most people regard as essential for health and well-being, including not eating fresh fruit or vegetables (*ibid*). This poses not only serious social inequalities for Māori who are economically marginalised in Taumarunui, but also the health and well-being inequalities that continue to exist for Māori in rural North Island which has been affected by high-levels of unemployment (Nel & Stevenson, 2019).

5.3.   Ngā Hau e Wha Maara Kai

Growing food plays an integral role to addressing issues of poverty, unemployment, health and well-being. These issues galvanised the actions of Māori elders in 2010 to establish a community-based food growing initiative known as Ngā Hau e Wha Maara Kai. The name Ngā Hau e Wha represents the four winds of Tawhirimatea (God of the Winds) and signifies the Māori elders coming together in Taumarunui from other parts of the North Island. The four winds powerfully resonate in contemporary Māori society, their knowledge and belief systems.

As a small-scale food growing initiative, Ngā Hau e Wha aim to reintroduce knowledge about mahinga and māra kai along with applying cultural concepts and practices associated with tikanga Māori. Ngā Hau e Wha grow a diverse range of vegetable and fruit crops, including a native nursery. They also supply other materials and plants to the wider community, as well as sharing and swap seed, food and plants within a wider network of similar groups beyond the community. While seeds and plants may or may not be traditional customary foods, the

more important point is to develop a community food growing hub that reconnects people with land and food.

Photo 1: Welcome upon entrance.

Photo 2: Native nursery.

Ngā Hau e Wha recognise Te Tiriti o Waitangi in the everyday activities of what they do. This means the business of the organisation acknowledges the role of Te Tiriti in Aotearoa, while leaving the political nature of treaty interests to other entities. The inclusion of Māori values and principles in their practice, however, allows for the rangatiratanga (sovereignty/self-management) of the group to exercise decision making in matters relating to the core business of growing and providing food. Keeping a community garden financially afloat, however, does come with its challenges. Upkeep of the property requires monetary input. Securing funds generally come in the form of applying for grants through Te Puni Kokiri (TPK/Ministry of Māori Development) and resource/network support through Tāhuri Whenua, representing Māori interests in the vegetable and horticulture sector. From something that started from very small beginnings, Ngā Hau e Wha developed with community support, along with the members' imagined possibilities:

> With six boxes, that's how we started our garden. Then the power board brought some old power poles and we made garden beds, … then people started dropping off more stuff and it expanded from there. That's right, when we started there were four other community gardens around town. People didn't believe we would last. We asked the mayor at the time for a reference to apply for funding and he refused cause he didn't believe we would last. All these years later we are the only community garden in town (N).

It can be argued that a 'Māori way' of doing things is key to Ngā Hau e Wha's self-reliance, self-organisation and continued garden operation.

5.4.   Living by Māori Values and Principles

As a group, growing their own food gains a certain amount of control and agency in determining their own possibilities, goals and practices. For Māori growing kai also connects to ancestors, to their knowledge base and their wisdom. In this context, Indigenous knowledge provides instructions for appropriate conduct to all of Creation and its beings. A member expressed the importance of kai as it nourishes knowledge from the past and connects to the present and future:

> Kai is the essence of all things. Really without a kai whether the birds are eating it or the cows, that's the number one thing, the first thing that comes through the ground and this goes back to our creation stories, our tikanga side of things (P).

For the members practising tikanga in the māra creates enduring relationships with land, kai and people. This relationship is culturally intrinsic and fundamental to Indigenous ways of knowing, living and being. For example, growing food promotes the values of manaaki (care and responsibility), while nourishing Papatūānuku and the renewal of wairua (spiritual world). One member expressed a vision of growing food by acknowledging how Māori used to do things:

> Māori are māra kai practitioners, we are gardeners. Our ancestors have done this in the past, so we know this through our whakapapa, our origins. The sons of Papatūānuku and Ranginui [Sky Father] include Rongo-ma-Tane and Haumie-tiketike, guardians of the cultivated and uncultivated crops. We were horticulturists and this matters for survival, hospitality and health. This is not new to us but how we go about gardening today is different. It lifts your spirit (P).

This comment resounds strongly as another member spoke about the cultural relevance of developing skills with growing food and the importance of passing knowledge on for the health and well-being of younger generations:

> Cultural knowledge should be the basis of everything. To feed yourself is to feed your knowledge and to learn how to feed yourself is even furthering your knowledge. It's like the koru[18], that's why it's so important: it's the birth of life. That's how you birth over life from feeding yourself to feeding something, and if you can learn these skills you can actually feed yourself and everyone else, and to pass this on its even better. So, this is really important to us, is to get this across to the younger ones so it can help them through life (J).

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[18] The koru is often used in Māori art as a symbol of creation. It is based on the circular shape of an unfurling fern frond that conveys the idea of perpetual movement. Koru symbolises new life, growth, strength, and peace.

5.5. Pātaka kai

Respecting and understanding Māori concepts and practices in māra kai is a starting point to understanding cultural perspectives of health and well-being. A physical and symbolic place for applying tikanga to māra kai is through a pātaka. In pākehā terms a pātaka is known as a food storehouse. However, under tikanga a pātaka is far more significant, particularly when it comes to ways of knowing, doing and living as Māori in the māra. In short, a pātaka is a house of knowledge yet, under tikanga there is great worth instilled in sharing and learning from others:

> Back in the day we use to have one [a pātaka] in the bush. When we finished our work we would get in a circle, the chief or boss would ask what you did today. Like a classroom we were spreading our knowledge, there was no power just a pātaka to share our mātauranga. Trust the knowledge they take from you and take it to the real world and learn from you. That's what we are about, Ngā Hau e Wha (P).

Photo 3: Pātaka kai at the heart of the māra.

Photo 4: Pātaka kai a place of storing and sharing knowledge.

Other members expressed several different ways that tikanga is practised in the māra with the pātaka playing a key role. Of significance is the continuous renewal of knowledge:

> A pātaka is a framework on its own. The pātaka is in the middle, you have the māra coming through connecting the pātaka to the next generation [of seeds]. It is a seed bank, knowledge bank kind of thing and that knowledge goes back out again. It's not a one-way thing, it's a cycle of knowledge (S).

While concepts like food security and sustainable agriculture expressed through SDG2 are framed in a western system of knowledge, they are closely linked to tikanga principles and practices. In relation to food security, members commented on the pātaka as a vital keeper of environmental wisdom:

> The only way we see it [food security] is through the pātaka to make it sustainable. Without a pātaka we wouldn't know where to store our seeds, so without a pātaka our food security is gone. Under tikanga the pātaka is the thing of all māra kai. Where the pātaka is concerned you put the pātaka [in the centre] and over [to the side] you put the māra kai. For everything to succeed after that, they have to come through the pātaka (P).

While a pātaka is seen as an accumulated body of knowledge, it is also a ceremonial space for gathering (generally outside) and sharing important traditional knowledge with preparation, planting and maintaining māra kai:

> If you look at traditional food, it's not just food it comes with knowledge of how to plant it, how to cook it so that is part of the traditional knowledge. The bank of kai, it is the bank of the whenua. It's spreading our knowledge a learning experience (S).

In an Indigenous knowledge context, the pātaka is not simply a product (in this sense knowledge), it is a process as well. The pātaka represents knowledge of something one does and integrates thought, experience and action combining people, place, product and process.

5.6.   Contributing to Community Health and Well-being

Producing food in a community garden provides a context for connecting fresh kai to hauora (health and well-being). Durie's (1994) concept Te Whare Tapa Whā (the house of four sides) provides a Māori perspective on health and well-being and is widely used throughout Aotearoa as a guide for discussions and practices involving Hauora. Like a house, each of the walls are interrelated as described in Figure 4. The concept of hauora encompasses taha

tinana (Physical well-being), taha hinengaro (mental and emotional well-being), taha whānau (social well-being), and taha wairua (spiritual well-being).
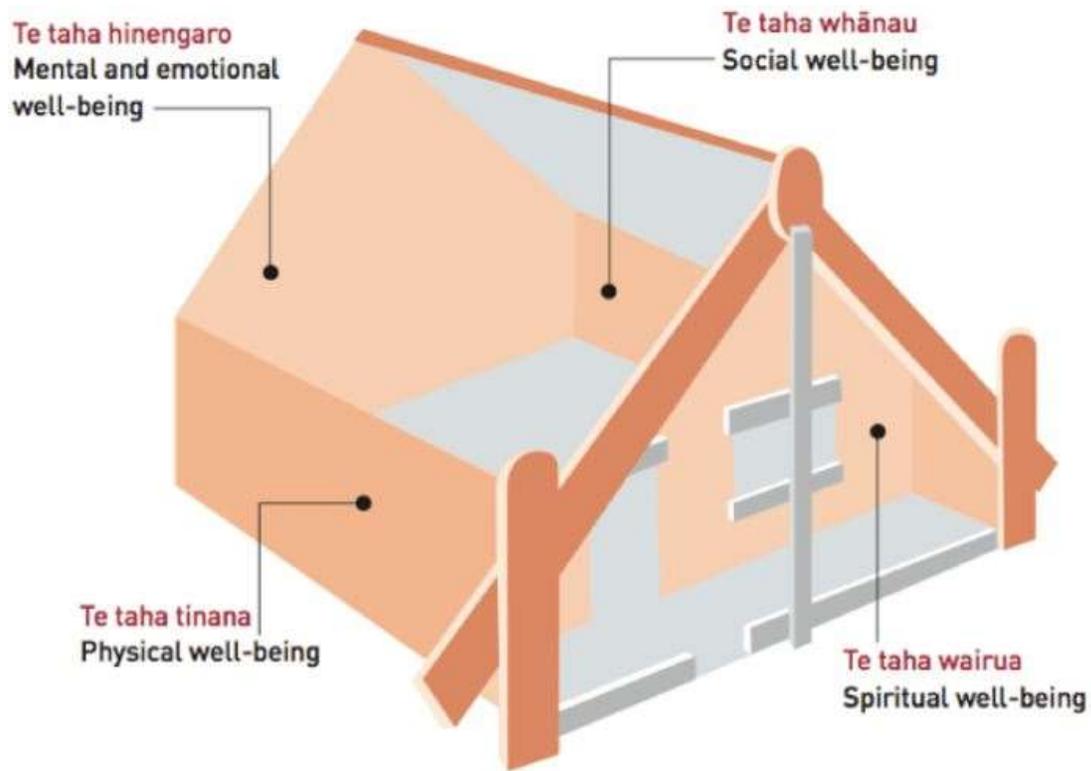
Figure 4: Te Whare Tapa Whā Concept of Hauora (Source: Durie, 1994).

While not explicitly stated, this concept is deeply entrenched in Ngā Hau e Wha philosophy. A member expressed eating fresh kai from the garden was part of growing up, and why they still do it today:

> Well it's a hobby type of thing. It's about providing healthy kai for everyone here in Taumarunui. As Māori we have a different way of looking at it and it came from our upbringing with the old nannies. The number one priority growing up was working with our nannies in the māra growing and eating healthy kai from the garden, and it still applies today (N).

Photo 6. Preparing a māra.

Photo 5. Growing healthy kai in a raised māra.

Ngā Hau e Wha is about finding opportunities in shifting attitudes towards the importance of growing fresh healthy kai. Being a food producer raises an interesting discussion on the producer/consumer relationship. For Ngā Hau e Wha the degree of involvement with the wider community is challenging at times. A member expressed that some attitudes towards community gardening are negative and education is the way to change this:

> They just don't get it. They don't register that a lot of kai that people buy from the shops can be grown for less, and it's healthier and easy to grow. The only way to get people back in the garden is for a hua [great/big] of a disaster to happen. The system is not preparing our kids. Our kids need to be taught, bring them back to the land for this type of learning. They should make it a thing in schools [curriculum]. Teach the kids the kai and the language at the same time (N).

However, some people do get it. Whānau and friends come to assist and through that they connect with the whenua, which is a key priority for Ngā Hau e Wha. In this context, producing food keeps them thinking about the collective ways in which they make and receive their living and provide for others in turn. Formal and informal food growing work such as working bees and weeding parties are encouraged as frequently as possible. In return people receive a meal, produce, seeds or seedlings for their labour, as they wish:

We enjoy when people come to help. There are many jobs that are needed from weeding, pruning, planting and the like. Some people are given veggies and other things for their work. They normally have a kai [meal] while here as well (N).

Working with a collective ambition draws attention to a spirit of reciprocity between both parties. The notion of giving and receiving is firmly grounded in their principles and practices, and essential to their everyday economy.

5.7. Challenges of Sharing and Learning from the Māra

Ngā Hau e Wha are also faced with the challenge that comes from living in a world where food is a matter of convenience. As the current food environment promotes an over-consumption of energy-dense nutrient-poor foods, it is discussed there is an association between community retail food environments and poor dietary outcomes (Sushil, et al, 2017). However, a community garden is an excellent teaching and learning resource that offers potential in reversing such trends. A garden not only introduces knowledge on how to grow kai but instils aspects of hauora in tamariki (children). This is useful when connecting Māori health and well-being to the natural environment as it demonstrates Māori relationships with and intimate connection to the land. As one member puts it:

You put little kids back in the garden and they absolutely love it and to keep that instilled in them when they get to an older age to carry on then they'll realise how important it is. Kai from the garden has a different taste: they can pluck it straight from its mother and eat it raw (N).

Ngā Hau e Wha also provide an alternative market in which food is accessible to meet the needs for those who cannot afford to purchase through conventional markets. Ceremonial gatherings like tangihanga (funeral) are a case in point. When there is a passing in the whānau there is an obligation for relatives to support the ceremony. At a tangihanga there is a lot of pressure on whānau to supply kai:

It is hard for Māori when someone dies and hard for them to go straight to the shop to buy food. We are always there with the first food to help with costs and release … financial pressure from whānau (P).

Acts of kindness, care and support are reflected through providing kai and assistance to low income families who cannot afford, access or utilise fresh healthy kai:

> Many whānau struggle to feed their family good food. Many children at the kura[19] are hungry. When kai is ready it goes out to several marae and private homes. We operate with an aspiration of seeing our youth, our people learn about growing kai, with what we know, how we connect to knowing is important for well-being through māra kai (S).

Ngā Hau e Wha understand they cannot change people's circumstances. They cannot provide jobs that many in the community need. They also know that greater things need to happen in terms of whānau been able to afford, access and utilise healthy kai. However, Ngā Hau e Wha holds a very important place from which to start small socio-cultural and economic activities with Māori health and well-being a key priority. This demonstrates how culture shapes the way kai is produced, made available, accessed and used.

5.8.   Chapter Summary

While Ngā Hau e Wha face challenges and uncertainties, they seem to have an effective approach to small-scale food production. Ngā Hau e Wha exercise control and decision making over the things that matter to them – growing food to share, eat, care for and learn from. Incorporating Indigenous cultural principles and practices into their philosophy promotes multiple possibilities. From reintroducing and reconnecting people to knowledge and skills about growing food to applying cultural concepts and practices associated with tikanga Māori, Ngā Hau e Wha enhances the wellness and well-being of whānau, marae and community.

The following chapter provides a discussion and conclusion of this research project. It engages with ideas on Indigenous development, the SDGs and food. Drawing on post-development thinking in terms of alternatives to development, links are made between how Ngā Hou e Wha's possibilities, goals and practices operate in the context of a diverse economy. This highlights a viable economic alternative by contributing to a community food economy and how this aligns with SDG2, in achieving food security and sustainable agriculture, recognising Indigenous people's potential contributions to sustainable development.

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[19] Refers to School, house of learning.

Chapter 6: Discussion and Conclusion

> Growing food is growing diversity and freedom, it involves rejuvenating the seed and soil, it rejuvenates culture and community - Shiva, (2015)[20].

6.1. Introduction

This chapter explores the relevance of the sustainable development agenda and food security in the context of Indigenous development. Small scale food production features prominently around the world as a means to improve food security and sustainable agriculture, thus contributing to Sustainable Development Goal 2 (SDG2). Drawing on Gibson-Graham's (2005) theorisation of community economies, the diverse economies framework (DEF) highlights how Ngā Hou e Wha parallels similar practices and principles in line with viable alternatives by contributing to a transformational agenda SDG2 aims to achieve. As a community food economy, Ngā Hou e Wha helps address research question 2 capturing *how is Māori knowledge and their approach to food production aligned with food security and sustainable agriculture, as conceptualised by sustainable development goal 2?* Through this knowledge and approach to food production, it is brought to light that SDG2, associated targets and the food security framework has much to gain by incorporating cultural dimensions, if food system change is a fundamental hallmark to achieve this goal. The chapter concludes by suggesting that diverse economic practices should be evaluated regarding the degree to which they enable an expansion and inclusion of Indigenous perspectives to the SDG framework.

6.2. Indigenous Development and the Sustainable Development Goals

The SDGs address some of the failings from previous global commitments of the Millennium Development Goals where Indigenous peoples were largely invisible (Buenavista et al., 2018). The 2030 Agenda provides a blueprint to stimulate action in taking transformative steps toward a sustainable and resilient path. Viewing alternative paths to development are recognised in the outcome document of the 2030 Agenda:

> We recognise that there are different approaches, visions, models and tools available to each country, in accordance with its national circumstances and priorities, to achieve sustainable development; and we reaffirm that planet Earth

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[20] Quote cited from the back cover of Hutchings, (2015).

and its ecosystems are our common home and that 'Mother Earth' is a common expression in a number of countries and regions (2015, Para. 59).

This signals development is now seen in a more broad and diverse terms in accommodating goals in line with Indigenous cultural values and practices (Barcham, 2012). The voices and world views of Indigenous peoples have much to contribute to achieving equitable sustainable development, as expressed by the former United Nations Secretary-General Ban Ki-moon claiming "There is much to be learnt from [I]ndigenous peoples as we seek to find solutions to the challenges of combatting climate change and managing Mother Earth's resources in a sustainable way" (2015, par. 6). However, any form of Indigenous development, as part of a wider framing of global sustainable development agendas, must contain cultural dimensions of Indigenous worldviews. While Indigenous knowledge has many applications in various contexts (McGregor, 2004; Smith, 1999), Indigenous spiritualities and values of reciprocity, harmony with nature, unity and caring and sharing, among others, are vital in bringing about a more just, equitable and sustainable world.

6.3. Aligning Indigenous knowledge and Culture with SDG2

Food security and sustainable agriculture maintains a prominent hotspot in development debates reflecting a complex sustainable development issue (Stevenson, 2013). Today's dominant food systems, which are heavily industrialised contribute between 19% and 29% of global anthropogenic greenhouse gas (GHG) emissions (IPCC, 2019; Vandermeer et al., 2009; Vermeulen et al., 2012). Given this context, the industrialised global food systems are not sustainable (Gliessman, 2014), nor compatible with the three dimensions of sustainability - economic, social or environmental. Nevertheless, the SDGs find themselves within the interface of contesting ideologies of agro-capitalism and differing approaches to land utilisation and production. With this in mind, SDG2 asks for transformational change in our food systems with Locally-centred systems representing a significant position within the broader aim of SDG2. Through the implementation of Target 2.3, small-scale food producers including Indigenous people's frames part of this requirement. Set within a diversity of cultural principles and practices, Indigenous knowledge and approaches to food production must be hailed fundamental to this inclusion if SDG2 is to be met (Buenavista, et al., 2018; Watene & Yap, 2016). But this inclusion will only be realised through systematic efforts to

promote Indigenous knowledge towards an understanding of how to support Indigenous food producers better, as well as the implementation of this understanding.

Indigenous worldviews and voices were identified as missing or side-lined in Chapter 2 regarding the 2030 Agenda, noting culture has often remained on the fringes of discussion (Cisneros, 2017; Yap & Watene, 2019), that development has deep structural roots in global capitalism (Kothari et al., 2019), and the dominant role development has forged over nature, therefore perpetuating neglect of Indigenous peoples and undermining their conceptions on development (Demaria & Kothari, 2017; Fukuda-Parr & McNeill, 2015; Taylor, 2007; Yap & Yu, 2016). Chapter 3 identified Indigenous communities as being worse off in terms of food security in developed countries. This situation merits particular attention with respect to Indigenous people's experiences of poverty and inequality, and subsequently, the inadequate dietary intakes, overweight or obesity and the development of life threatening disease Indigenous communities face (Bidwell, 2009; Carter et al., 2010; Jones et al., 2014; McKerchar et al., 2014; Tarasuk et al., 2019; Theodore et al., 2015). Likewise, Chapters 3 & 5 highlighted culture as a key determinant of Indigenous diets, including the types of food and the practices of procurement, preparation, sharing and eating. Food is therefore central to identity, maintenance of culture and Indigenous health and well-being, thus warrants inclusion in the SDGs as a fourth dimension alongside the social, economic and environmental pillars (Watene & Yap 2016). This would suggest the need for a more robust discussion of cultural aspects in terms of what food security and sustainable agriculture means to Indigenous peoples if real inclusion is to be met.

6.4. Indigenous Food Systems as Diverse Economies

A key characteristic shared among Indigenous peoples is an understanding of food security and sustainable agriculture involves an intricate and interconnected relationship with the natural world and its resources. With a rich and evolving knowledge base, cultural traditions and practices imbue alternative notions to mainstream conceptions of sustainable development (Buenavista et al., 2018; Harmsworth & Awatere, 2013; McGregor, 2004; Yap & Watene, 2019). It is important then to highlight the findings in this research indicate culture is a tool for tackling social injustices and inequalities, and consequently combating issues of food availability, accessibility, utility and stability for Indigenous people. Alternatives to

development in the context of a diverse economies approach offers insights to this realisation.

The concept of diverse economies draws on Gibson-Graham's (1996, 2005) theorisation of community economies. Situated within the broader framework of post-capitalist theory, Gibson-Graham argue many of the solutions to issues faced by people and planet are grounded in economic difference outside of the dominant capitalist economy. They deconstruct capitalism as the dominant economic system against which all other activities are compared and scrutinised arguing that economies can be reframed through the analysis of the different ways in which people arrange their livelihoods and economic systems, as ongoing sets of performative social relations. Concerned with the practice of economic self-determination, community economies reframe the economy as a diverse space of ethical and political decisions creating a vision that other worlds are possible. Community economies become spaces of negotiated interdependencies in which local actors have agency to shape what development means to them, seeking alternatives to constructing their economy as they see it (Gibson-Graham, et al., 2017).

Indigenous people cultivate diverse economies of food producing, harvesting, processing and consumption that are important to the maintenance and expression of Indigenous ways of knowing, living and being (Coté, 2016; Huambachano, 2019). Indigenous knowledge reflects unique epistemologies and ontologies, whereby Indigenous peoples are inheritors of cumulative and diverse bodies of knowledge and practices centred on the nurturing of biodiversity and encapsulated in distinct cultural principles and values (Huambachano, 2019; McGregor, 2004; Watene, 2016; White, n.d.; Whyte et al., 2016). Crucially then, Indigenous economic activities and relations with food systems stretch beyond a monetised system that imbue the spiritual, the cultural, the communal and the ecological value of food. It involves communities acting collectively and in solidarity that prioritise social, cultural and ecological objectives, promoting access to local food and bringing attention to the essential role that Indigenous people play in addressing food security and sustainable agriculture.

6.5. Ngā Hou e Wha as a Diverse Economy

A way to represent Ngā Hou e Wha is to view their food producing practice through a diverse economy framework. Table 3 provides examples of how the three sets of economic practices and relations function and what might be included. Among the transactions, there is a variety of ways in which goods, services and finances are negotiated between economic actors. Ngā Hou e Wha's approach to food production aims to shorten the links between producer and consumer within a localised trading system. Here we see alternative market transactions in the form of exchanging native tree seedlings grown by a local farmer for produce. Similarly, with the gifts of culture, knowledge and food inherent to an Indigenous way of life, non-market transactions are performed through their wider network as part of a Māori growers' collective with regular gatherings and engagements involving seed/produce swaps and seed/produce gifting. The direct relationship between producer and consumer is accentuated further through traditional cultural practices that can be seen to sustain and promote social, cultural, ecological and community well-being. Indigenous acts of cultural practice and exchange in the way of gifting food to local whānau for tangihanga, providing produce for foodbank and kura alike.

Among alternative paid and unpaid labour, the Indigenous ritual of gifting produce is performed as in kind and/or part payment in a reciprocal act of labour. This is seen through food growing work such as working bees/weeding parties whereby community members perform in exchange for produce. Ngā Hou e Wha operate as an alternative capitalist and non-capitalist enterprise by implementing cultural and ethical principles to their practice. These principles engage Indigenous cultural values and the practice of tikanga. A key example is how a pātaka provides the foundation for living by Māori values. In essence, the pātaka is mauri (life force) and knowledge bank based on Māori ways of knowing, living and being.

Transactions	Labour	Enterprise
Market	*Paid*	*Capitalist*
Alternative Market Local trading systems Sale/exchange trees, produce	*Alternative Paid* Reciprocal individual & collective work In kind – produce given as part payment	*Alternative Capitalist* Community enterprise Socio-cultural, ecological ethics Non-profit / profit reinvested Redistribute surplus
Non-Market Indigenous exchange – Seedbanks/seed swap/ seed gifts food exchanges between growers of other crops/plants Koha / gift giving of food for tangihanga Non-monetised exchange & donations foodbank / kura Spiritual/customary knowledge system	*Unpaid* Volunteer/Whānau /Community work Self-provisioning labour - food growing work (such as working bees/weeding parties)	*Non-Capitalist* Subsistence production

Table 3: Ngā Hou e Wha as a Diverse Economy (Adapted from Gibson Graham, 2005).

6.5.1. *Making capacities, assets and possibilities of a small-scale food economy visible*

Post-development thinkers have critically evaluated development by re-valuing other ways of knowing, living and being. In doing so, proponents like Gibson-Graham (2005) highlight the importance for understanding the nature of economies in relation to Indigenous community food producing enterprises like Ngā Hou e Wha. Against this backdrop, it is clear Ngā Hou e Wha contributes to a diverse economies programme. More so, this case study provides a host of economic activities and exchange relations with the wider community that reflect inclusive and sustainable forms of local food production and consumption. Ngā Hou e Wha focus on the entire food system from the pātaka with its knowledge and seed bank to the table for consumption. Following Gibson-Graham's mapping of community capacities, assets and possibilities, Ngā Hou e Wha's community food economy involves the application of integrated ecological, economic and socio-cultural elements to local circumstances. The elements include a community food economy serving as a vehicle for self-determined

development and community economic revitalisation. Small-scale food production can enhance a community's ability to achieve food security and provide a food system that is accessible and participatory. Developing a local food system provides a space for the community to exercise choice and control over what they eat. These elements serve as pointers to suggest small-scale food production initiatives benefit not just the people who made the initiative possible, but the wider community. Localised food economies like this help transform into what Gliessman (2016, p. 188) suggests as a kind of "food citizenship" that can be seen as a powerful tool for food system change. Through co-creating alternative food spaces Ngā Hou e Wha helps 'make visible' the capacities, assets and possibilities of a small-scale food economy with cultural values at the heart of their practice. In short, they help transform our thinking of an economy by connecting the diverse ways they collectively make their living, receive their living from others and in turn provide for others.

6.5.2. Integrating culture into food security and sustainable agriculture

Through Māori values and practices, Ngā Hou e Wha demonstrate the need for culture to be incorporated centrally into SDG2 and the food security framework. Culture shapes how sufficient quantities of food are made *available*; culture influences food *access* providing the means to obtain healthy food, which is out of reach for many; culture shapes food *utilization* concerning the appropriate use of food based on cultural knowledge and practice; Finally, culture influences the temporal dimension of food *stability* ensuring a locally secure food context can be maintained. In this respect, tikanga provides a pathway for incorporating existing knowledge and building new knowledge, therefore extending our current understanding of what constitutes food security and sustainable agriculture from an Indigenous perspective, and as conceptualised in SDG2. With land as a cultural and environmental determinant of health, Ngā Hou e Wha contributes to increase Māori control over these determinants, therefore fit within the parameters of Māori health and well-being promotion. Hond et al., (2019) contextualise the garden as a site of agency and a space for food system change by suggesting:

> Gardening engages Māori at the most fundamental sites of agency – to act in restoring one's control over production of food, to act as a collective, to act with an optimistic vision of the future, to act with confidence grounded in one's identity, to act with whole whānau participation, to act in determining what has value, to act in restoring the land, and to be recognised as an actor responding to

one's own problems and those of others. Gardening provides the opportunity to
act (p.51).

Overall, the act of gardening provides a space to restore *inclusive* control over Māori food
production. Gardening for the people of Ngā Hou e Wha rejuvenates culture and community,
enlivens and shapes their sense of belonging, giving purpose, well-being and meaning to life.
In this context, gardening *is* a form of cultural expression and identity.

6.6.   What Can Sustainable Development Goal 2 learn from Ngā Hou e Wha?

An overarching hallmark of SDG2 in the pursuit of global food security and sustainable
agriculture, is for food system change. Importantly, sustainable food production systems and
resilient agricultural practices are signposted as the foundation requirements to achieve
SDG2. As a small-scale food producing model Ngā Hou e Wha provide an opportunity to act,
in part, and make this change possible. In accordance with the associated targets of SDG2,
they assert localised approaches ensuring the community has access to safe, affordable,
healthy and enough food all year round (Target 2.1). Ngā Hou e Wha strengthens local
agricultural productivity using local resources, knowledge and monetised/non-monetised
innovations through local market linkages and networks (Target 2.3). They implement
resilient agricultural practices that increases productivity at the local level, that helps
maintain environmental health and strengthens capacity for adaptation to climate variability
and change (Target 2.4). Drawing on Indigenous knowledge, crop diversity is sustained
through traditional genetic diversity of seeds and medicinal/cultivated plants. Under tikanga,
the pātaka provides a repository of knowledge and acts as a keeper of seeds and plants, to
ensure equitable sharing of benefits and safeguard food spaces in the future (Target 2.5).
SDG2 can learn from micro level food initiatives like Ngā Hou e Wha. That is, they provide
insights not only in response to challenges facing food security and sustainable agriculture at
the national, regional and international levels, but address practical and principled lessons to
enable food secure and resilient foodscapes at the grassroots level. In this respect, Ngā Hou
e Wha offer a great deal the rest of the world, and in particular, SDG2 can learn from.

6.7.   Concluding Comments

With a third of the time to achieve the 2030 Agenda already gone, little is known about the advancement of Indigenous contributions toward such a recently agreed upon global framework. Moreover, while SDG2 expresses inclusiveness of Indigenous peoples, the Māori concept of food security extends beyond the dominant development gaze that drives this global framework. As with other Indigenous peoples, Māori understandings of food security and sustainable agriculture emphasise a more integrated, holistic meaning that is integral to ancestral knowledge and cultural traditions, practices and knowledges. For Māori, mahinga and māra kai are enshrined in the role mana, manaakitanga, mātauranga Māori, mauri, kaitiakitanga and tapu (sacredness, restriction) imbues inseparability between people and the land (Durie, 1998; Mead, 2003). These principles are not the only ones that can be used to organise Māori gardening practices, but they provide a strong tikanga basis and starting point for guidance. Hence the inclusion of Māori participation in achieving food security requires a fundamental shift in paradigm regarding what food security means for Māori, their intimate connection to natural resources and holistic development as tangata whenua (people of the land). This feature of culture highlights the importance of micro-level, change oriented research to build upon the inseparable ties between culture, food security and sustainable agriculture, and the continued research these sites offer.

Ngā Hou e Wha provide ways of understanding how cultural knowledge and practices has far reaching and important implications for an Indigenous way of securing and sustaining a community food economy. *Without a pātaka there is no food security*. This sheds light on the importance of cultural expression and identity alongside an Indigenous understanding what food security means to Ngā Hou e Wha Maara Kai. A Māori worldview is a major source of Ngā Hou e Wha's food producing ethic and practice and a fundamental resource for developing a sustainable, resilient and healthy community. Engaging Māori cultural principles to food production and consumption sustains and promotes what food security means to this community and further afield. This initiative makes visible a small-scale community food economy as a viable alternative to finding "… a much-needed transformation of our food systems …" (da Silva, 2019), and ultimately toward the pursuit of sustainability. In closing comes a careful reminder that "[t]he system is not preparing our kids. Our kids need to be taught, bring them back to the land for this type of learning" (Participant N, personal

communication, December 13, 2019). A critical point that a synergy between the local and global, Indigenous and mainstream development is necessary with respect to our collective journey the 2030 Agenda for Sustainable Development espouses that *no one will be left behind*.

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Appendices a)

Institute of Development Studies
Massey University

Required information for in-house Ethics document from Masters and PhD students

Human Ethics Application Approval: 4000021292

Name: Erin Withers

Research topic: Indigenous Approaches to Achieving Food Security and Sustainable Agriculture in Aotearoa New Zealand: Why Culture Matters in Achieving Sustainable Development Goal 2.

1. **Summarise your research project (1 paragraph)**

The year 2015 marked a new era for global development. The United Nations General Assembly (UNGA) '2030 Agenda' endorsed the sustainable development goals (SDGs) to guide global development over the course of their lifetime. The 17 SDGs recognise poverty, marginalised communities and social inequalities are pertinent issues for all governments to address. The SDGs and associated targets and indicators are thus universal, which means New Zealand, as a signatory to these goals, is expected to implement them to inform domestic development policies. While the SDGs in their entirety are seen to be "…integrated and indivisible …" (UNGA 2015 p.1), this research report intends to focus on SDG2 *'End hunger, achieve food security and improved nutrition, and promote sustainable agriculture'*. More significantly, target 2.3 of SDG2 explicitly addresses Indigenous people's involvement in agricultural productivity in achieving food security and sustainable agriculture. This has important implications, not only for strategic planning regarding food security and nutrition at a national level, but also as to how Māori conceptualise and seek to achieve food security and sustainable agriculture, if they so desire, within this global agenda. At the heart of this is how Indigenous food security and sustainable agriculture perspectives provide context for framing an analysis for Māori food security and community development using traditional and non-traditional food producing practices.

2. **Summarise your methodology (1-2 paragraphs)**

Qualitative research approaches are utilised to gain insights into people's attitudes, interpretations, behaviours, value systems, concerns, motivations, aspirations, culture or

lifestyle (O'Leary, 2017). As a method of inquiry, qualitative research seeks to collect and generate data in natural settings. That is, qualitative researchers generally go to particular places, locations or sites – what is otherwise known as 'the field' – to study the people, communities and societies that reside there (see Stewart-Withers, et al. 2014). A qualitative approach to doing research thus lends itself to a particular set of data collection methods such as interviews, observation, or document analysis (O'Leary, 2017; Stewart-Withers, et al. 2014).

With the above mention in mind, the intention of this primarily desk-based study is to undertake an in-depth literature review (scholarly and grey literature), a document analysis and 3-4 key informants interviews of people involved in agricultural productivity which focuses on improved food security for Māori, or who are involved in food production underpinned by an Indigenous worldview.

3. **Reflect on the following ethical issues with relation to your research project (an explanatory paragraph under each bullet point is usually sufficient):**

- **Recruitment & access to participants**

My approach to participant recruitment will be purposive snowballing (O'Leary, 2017), and my start point will be contacting key informants who I know research and work in this area and so I know they have knowledge about this research topic. Upon meeting with potential participants, a one-page information sheet will be provided outlining background/purpose of the research, introducing myself as the researcher, and outlining participant rights. This will be the basis for obtaining informed consent. People will be invited to participant and there will be a period of time between the invitation and acceptance so people have time and space to think.

- **Obtaining informed consent**

As mentioned above, participants will be given an information sheet as part of recruitment process and written informed consent will be obtained prior to interviews/korero taking place. I will also look to confirm consent at the end of the interview, understanding consent to be a process rather than a point in time. I will also ask participants if I can record the interviews for the purpose of accuracy, so I can concentrate with the understanding they can turn the recorder off at any time. If people do not wish to be recorded I will look to take notes.

- **Privacy & confidentiality**

Participant's identity and any identifying materials will be omitted from any written material. I will look to use pseudonyms and will ask participants how they would like to be referred to. If agreed upon, however, I'll give people the choice as to whether they would like to be identified. All recorded and hard copy interview/korero notes and transcripts will be kept safe in a locked office, in locked filling cabinet. This information will be shared only with my supervisor if this is a requirement. I will inform participants of issues regarding privacy and confidentiality before obtaining their consent.

- **Potential harm participants/researcher/university**

Research at all times should be ethical and Massey University has a clear commitment to research integrity and undertaking research which avoids potential harm to participants/the researcher or the university. Any research with human participants requires the researcher to consider ethical principles. As articulated in the Massey University Ethics Code, the following key principles provide a framework that recognises the broad range of ethical issues:

- Autonomy: To what extent will doing this research enable others to freely decide to participate in light of their own beliefs and values?
- Avoidance of harm: To what extent will doing this research risk or cause harm?
- Benefit: To what extent will doing this research create, support or make likely benefits?
- Justice: To what extent will the benefits and burdens of this research be fairly distributed?
- Special relationships: To what extent would doing this research honour the ethical norms generated by the special relationships that the researcher has? (MUHEC, 2017).

From a Māori cultural perspective, Smith (2013) talks about ethical codes of conduct, (or protocols) which govern relationships that are key in establishing trust between the researched and the researcher:

- Aroha kit e tangata (a respect for people);

- He kanohi kitea (the seen face, that is present yourself to people face to face);
- Titiro, whakarongo…korero (look, listen…speak);
- Manaaki ki te tangata (share and host people, be generous, look after people);
- Kia tupato (be cautious, be politically astute, culturally safe, and reflexive, collaborative);
- Kaua e takahia te mana o te tangata (do not trample on the *mana* (dignity) of people;
- Kia mahaki (be humble).

I will apply the values and principles stated above through the practice of manaakitanga (hospitality), for example, provide koha (gift) in respect of gathering information from participants and/or hosting an afternoon tea while sharing korero with participants the outcomes from the report.

- **Handling information/data**

I will record interviews (with permission) on my voice recorder and save them under in a password protected folder on my laptop. My laptop is also password protected. I will not write the names or the organisations anywhere in the reports or have them on the voice recordings to protect participants' privacy. I will back up my work and store on the Massey One Drive.

- **Use of information**

Information gathered from this research will be used for the purpose of writing a 60 credit research report and subsequent oral presentations. There could be possibilities from key findings on writing an academic article. There is also possibilities of sharing findings with participants who could inform iwi-centered health and well-being promotion strategies.

- **Promising access to information**

Participants will have full access to the information I collect from them through receipt of a transcript of data if they would like it. Furthermore, feedback is viewed as extremely important part of the research experience and in keeping with the Māori approach of *ako* (reciprocal learning). Once I have my initial findings, I will develop a 2 page summary which I will give back to participants. It would be my intention to offer this as part of consent, and if people wish to have this I will take an email address. This is also a good step to include in terms of verifying what I have found. Participants will also have access to the end research report as this will be online.

- **Conflicts of roles**

While there are no work-related or other specific conflicts in my role, I remain very aware of my own positionality, cultural knowledge and worldview. Being pākehā and wanting to undertake research involving and about Māori, does convey "a unique sense of superiority and an overabundance of desire to bring progress to indigenous people" (Smith, 1999, p.56). However, while it is suggested a binary tension exists between Indigenous and western

knowledge (Briggs, 2005), Durie (2004) views the interface between the two bodies of knowledge need not be a place of contest, but rather a site providing "opportunities for the expansion of knowledge and understanding" working side by side (p. 1142). As far as I am aware, despite Māori taking a proactive and increasingly committed role in food security practices, there are only a limited number of Māori academics currently engaging in this area of research. I believe this project creates a space for me to work alongside Māori with a shared vision to see New Zealand's transformation to upholding Māori values and practices in relation to food security and sustainable agriculture, in which it is hoped, contributes to national strategies, and in turn help Aotearoa New Zealand achieve SDG2.

- **Use of research assistant(s)**

This is not applicable - I am not planning to use a research assistant.

- **Cultural/gender concerns**

Smith's (2013) seven principles identified above guides a researcher to honour when working alongside Māori to reflect the cautionary way to proceed within any setting hosted by people of a different culture. My understanding has been facilitated through learning beside Māori students in a Māori Catholic secondary school (Hato Pāora) in my past role as a teacher. Learning and applying the principles of Te Ao Māori (Māori worldview) enabled myself to challenge my ways of seeing the world through a different cultural lens and helped develop a greater and more authentic appreciation of tikanga Māori. Gender perspectives on food security and sustainable agriculture will be applied by including women's voice as part of the knowledge gathering and analysing process.

- **Travel Overseas'**

This is not applicable – my research is in Aotearoa New Zealand.

Appendices b)

RESEARCH REPORT INFORMATION SHEET

Indigenous Approaches to Achieving Food Security and Sustainable Agriculture in Aotearoa New Zealand: Why Culture Matters in Achieving Sustainable Development Goal 2.

Introduction

Kia ora – my name is Erin Withers. Thank you for considering to participate with this research. My background prior to this research is in horticulture, gardening/landscaping and teaching and learning about mahinga and māra kai. For a time I taught at Hato Pāora College in the Manawatū. I was employed to establish and integrate an environmental education programme into the college curriculum applying mātauranga Māori and tikanga based principles. This is where my passion stems from to research food security and sustainable agriculture and, in particular, what this means from Māori perspectives.

This research asks the questions: *1) In what ways do Māori values and practices in relation to food production and consumption enhance health and well-being among Māori communities? 2) How is Māori knowledge and their approach to food production aligned with food security and sustainable agriculture, as conceptualised by sustainable development goal 2?*

This research is being conducted through analysing literature and site visits related to the topic by myself as principle researcher. Professor Regina Scheyvens (Institute of Development Studies, Massey University) is my supervisor.

Project Description and Invitation

In 2015 the Government of Aotearoa New Zealand endorsed the sustainable development goals (SDGs) with the intention to implement policies that aim to end poverty, improve health and education, reduce inequality, and lift economic growth. Food security and sustainable agriculture play a critical role to enable this. SDG2 calls to end hunger, achieve food security and improved nutrition and promote sustainable agriculture, with target 2.3 safeguarding a strong commitment to Indigenous approaches in agricultural productivity to achieve this goal. Despite upholding Indigenous peoples inclusivity towards achieving SDG2, research on Māori and their inclusion and participation to achieve food security and promote sustainable agriculture, as conceptualised by SDG2, is limited. This project applies a Māori research ethics framework known as Te Ara Tika that guides and informs ethical research practice within Māori community settings.

This research will utilise predominately qualitative methods including Kanohi ki te kanohi (face to face) interviews, observation and informal korero to allow insights into how Indigenous ways of knowing, living and being contribute to achieving food security and sustainable agriculture.

I have asked you to participate as I would like to draw on your experience and insight to help build my understanding as to how Indigenous knowledge and approaches in mahinga and māra kai can lead to achieving food security and promote sustainable agriculture for Māori. I would therefore appreciate it if you would consider taking part in this research. If you are a community member, I would like to interview you for approximately 1 hour. I would also appreciate the opportunity to have more informal korero/discussions with groups in your community (approximately 2 hours). If you are a key informant (e.g., scholar or mahinga and māra kai specialist), I invite you to take part in an interview (1 hour).

Data Management

The information provided will be kept confidential and stored safely. All recorded and hard copy interview/notes and transcripts will be kept safe in a locked office, in locked filling cabinet. This information will be shared only with my supervisor if this is a requirement. Electronic copies of data will be saved on my password protected laptop and stored on Massey University One Drive.

Participant's Rights

I would be delighted if you agreed to participate, but please be assured that you are under no obligation to do so. If you decide to participate, you have the right to:

- *decline to respond to any particular question;*
- *withdraw from the study up to 2 weeks from the interview;*
- *ask any questions about the study at any time;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;*
- *be given access to a summary of the project findings when it is concluded;*
- *ask for the recorder to be turned off at any time during an interview.*

Project Contacts

If you have any questions about this research please contact me directly:
Erin Withers
Mobile: 027 413 8874
Email: E.J.Withers@massey.ac.nz

Alternatively, contact the following supervisor to this research:
Professor Regina Scheyvens
Mobile: 021 217 9481
Email: R.A.Scheyvens@massey.ac.nz

Committee Approval Statement

Human Ethics application approval: <u>4000021292</u>

Appendices c)

MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŪKENGA TANGATA

Exploring Indigenous Ways of Knowing, Living and Being to Achieve Food Security and Sustainable Agriculture in Aotearoa New Zealand: Why Culture Matters in Achieving Sustainable Development Goal 2.

PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I ~~agree~~/do not agree to the interview being sound recorded.

I would like to be referred to in this study in the following way (fill in your preference):

- My name and title i.e. ……………………………………………………

- My title or a descriptor i.e. *people from nga hau e wha.*

I agree to participate in this study under the conditions set out in the Information Sheet.

I would/~~would not~~ like a summary report of the findings sent to me on completion of this research.

Signature: *S H Tong*   Date: 13-12-2019

Full Name - printed   *Thomas Hong Junor (Pae)*

Email address: *nhewMR2019@gmail.com.*

Te Kunenga
ki Pūrehuroa | School of People, Environment & Planning
Private Bag 11222, Palmerston North 4442, New Zealand. T +64 6 350 4343 F +64 6 350 5737. http://pep.massey.ac.nz