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Farming Lessons from Te Ao Māori



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TABLE OF CONTENTS

Executive Summary.....	5
Key Findings:.....	5
Recommendations:	5
Acknowledgements.....	7
Glossary of Terms	8
1.0 Introduction	9
2.0 Project Scope and Objectives	10
3.0 Methodology.....	10
3.1 Literature Review	10
3.2 Semi-Structured Interviews.....	10
3.3 Limitations of this research.....	11
4.0 Literature Review	12
4.1 Te Ao Māori and Mātauranga Māori in an Agricultural Context	12
4.1.1 Te Ao Māori.....	12
4.1.2 Mātauranga Māori	13
4.2 Key Aspects Relevant to Agriculture	14
4.2.1 The “quadruple bottom line” approach	14
4.2.2 The intergenerational perspective	15
4.2.3 Kaitiakitanga.....	16
4.2.4 Whakapapa & Whenua.....	16
4.3 Challenges & Trends in Aotearoa’s Agricultural Sector	16
4.3.1 Environmental Impact & the Conscious Consumer.....	16
4.3.2 Export Market Volatility & Uncertainty	17
5.0 Interview Findings & Discussion	19
5.1 The Importance of Kaupapa in Decision Making	19
5.2 Taking a Holistic Approach through Kaitiakitanga	20
5.3 The Value of Whanaungatanga.....	22
6.0 Conclusions	24
7.0 Recommendations	25
8.0 References	26
9.0 Appendix.....	29
Semi-structured Interview Key Questions	29

EXECUTIVE SUMMARY

The aim of this report is to provide an understanding of te ao Māori (the Māori world view) and mātauranga Māori (Māori knowledge) in an agricultural context and to explore how some of the concepts within this area can be utilised in a way that benefits both individual farms and the wider industry. The methodology used to do so includes a literature review on these two areas and the key trends and challenges being faced by the agricultural industry. This is followed by semi-structured interviews with four farming organisations implementing some or all of the concepts reviewed. The interviews explored their core drivers and aims and the benefits and challenges of incorporating these concepts and practices. Thematic analysis of the responses from interviewees was utilised to assess the qualitative data

Key Findings:

Utilisation of the “quadruple bottom line” approach (environmental stewardship, social responsibility, intergenerational wealth creation, and cultural revitalisation), taking an intergenerational perspective, Kaitiakitanga (stewardship) and the relationship between whakapapa (genealogy) and whenua (land) are key areas of te ao Māori and mātauranga Māori where great value for agriculture can be achieved. These areas have particular importance and relevance when used as potential solutions for the key challenges and trends in Aotearoa’s agricultural sector. The most significant of these are agriculture’s environmental impact and the rise of the conscious consumer as well as export market volatility and uncertainty in the current global context.

Within an agricultural context there are numerous practices, knowledge, concepts, and approaches present in mātauranga Māori and te ao Māori that have significant potential value. There is also a clear alignment as they are all focused on the natural world and society which are the fundamental components of both te ao Māori and agriculture. The most commonly incorporated aspects of mātauranga Māori were the use of kaupapa (principles and ideas which act as a base or foundation for action) to guide decision making, embracing a wider view of success along with taking a holistic view of farming practices and the importance placed on relationships and connections through whanaungatanga (relationship, kinship, sense of family connection).

Recommendations:

- ❖ Have patience and persistence in understanding the perspectives of Tangata Whenua at all levels and involve Tangata Whenua in governance and decision-making processes to ensure the best long-term outcomes are achieved on a consistent basis for communities and the environment.
- ❖ Creation of think tanks or collaborative projects focused on the agricultural sector with individuals from diverse backgrounds encouraging open thinking and interpretation of ideas.

- ❖ Encourage the uptake of new and novel approaches within farming and agricultural businesses as well as experimentation and trialling both on-farm and within business models.
- ❖ Cultivate a culture in agriculture of combined and cross-cultural thought processes where utilising western technological advancements within te ao Māori frameworks is celebrated and encouraged.
- ❖ Facilitate the development of kaupapa for farming businesses utilising te ao Māori to embrace wider definitions of success.
- ❖ Create a platform for meaningful and genuine engagement between iwi, hapū and industry to take a collaborative approach to the generation of solutions for the multitude of wicked problems facing both the agricultural industry and the communities it is present in.

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GLOSSARY OF TERMS

Te ao Māori	The Māori worldview
Mātauranga Māori	Māori knowledge
Kaitiakitanga	guardianship, stewardship
Whakapapa	genealogy, genealogical table, lineage, descent
Whenua	Land
Kaupapa	principles and ideas which act as a base or foundation for action
Whanaungatanga	relationship, kinship, sense of family connection - a relationship through shared experiences and working together which provides people with a sense of belonging.
Mana Whenua	territorial rights, power from the land, authority over land or territory, jurisdiction over land or territory
Iwi	extended kinship group, tribe, nation, people
hapū	kinship group, clan, tribe, subtribe
Tangata	People
Taiao	world, Earth, natural world, environment, nature, country.
Pākehā	New Zealander of European descent
Rohe	boundary, district, region, territory, area, border (of land).
Tauutuutu	reciprocity
Mauri	life principle, life force, vital essence, special nature, a material symbol of a life principle, source of emotions
taonga tuku iho	heirloom, something handed down, cultural property, heritage
mātauranga o te taiao	Māori knowledge of the natural world/environment
Mahinga kai	garden, cultivation, food-gathering place.
Tikanga Māori	the customary system of values and practices that have developed over time and are deeply embedded in the social context
Maunga	Mountain
Awa	river, stream, creek
Maramataka	Māori lunar calendar, a planting and fishing monthly almanac
Pā	fortified village, fort, stockade
Tuwatawhata	palisaded

1.0 INTRODUCTION

Research Question:

“How can Māori knowledge, world views, beliefs and practices be beneficially incorporated into everyday farming?”

The food and fibre sector has been and continues to be a significant contributor to the economic performance and position in Aotearoa. This is clearly evident in that almost 50% of total export value is provided by this sector (MPI, 2021). Growth in the value of exports from the food and fibre sector has been significant in recent years with an increase of 9,781 million dollars or 25.6% from 2017-2020 and is predicted to continue increasing. To ensure that this growth occurs the sector must continue to meet the current demands of consumers to achieve the greatest value possible and be able to capitalise on emerging trends seen in our key export markets (KPMG, 2022).

In a global context, Aotearoa’s agricultural industry has been largely world leading across multiple facets, in particular our low cost of production and our farming innovation (KPMG, 2021; KPMG, 2022). This has historically allowed for a competitive advantage over our competitors on the world stage based on these aspects. This competitive advantage has been significantly reduced in recent times due to the growing cost of agricultural production in Aotearoa and as such, a change in thinking to how higher value can be generated from our products needs to take place. There has been work undertaken in this space already by the likes of KPMG in their Agribusiness Agenda (2021 & 2022) and through targeted market surveys driven by organisations like Fonterra through CGS (2019) and Perceptive (2019) which have all identified that there is significant value to be gained for all through greater Māori engagement in the agricultural sectors leadership (KPMG, 2022).

This report investigates the Māori knowledge, worldviews, beliefs and practices that are relevant to agriculture and pastoral farming in particular. This is carried out by completing a review of existing literature as well as interviews with farmers already incorporating mātauranga Māori or aspects of te ao Māori into their farming businesses. The findings and recommendations from this report will provide insight and encouragement for more farmers to do the same and will help to provide a base from which further research and investigation into this area of study can be continued.

2.0 PROJECT SCOPE AND OBJECTIVES

The key objectives of this research project are to begin to develop an appreciation and understanding of:

- Te ao Māori and mātauranga Māori in an agricultural context.
- Potential connections between and opportunities for improvement within Māori knowledge, beliefs, practices and world views and pastoral farming systems.
- How Māori knowledge, practices, world views and beliefs relevant to the land and the people on it, align with the farming community's key drivers and motivating factors.
- What can be done to bridge the gap between current farming practices and attitudes and utilise the knowledge and lessons present in te ao Māori and mātauranga Māori.

3.0 METHODOLOGY

3.1 Literature Review

A literature review has been completed which summarises the published information regarding te ao Māori and mātauranga Māori with respect to pastoral agriculture and its multitude of relationships and interactions between whenua (land), tangata (people) and te taiao (the environment). Literature on emerging trends and challenges in agriculture and the current direction of travel regarding key markets for Aotearoa's agricultural exports and the domestic context of pastoral farming was also reviewed.

The literature review is not exhaustive on the topics as a result of time constraints and so the outcome of this is to narrow the focus to a selection of key topics most relevant to the report subject and to analyse and compare literature on these in more depth than if a literature review of all relevant aspects was undertaken.

3.2 Semi-Structured Interviews

Semi-structured interviews (See appendix 1) were completed on four farming operations across the Taranaki, Wellington, Manawatu and Bay of Plenty regions. The farming operations undertaken were predominantly pastoral dairy and dry stock farming as well as apiculture. These four farming operations were chosen with the criteria of being successful farming businesses and already incorporating aspects of te ao Māori and/or mātauranga Māori into their operations and decision-making processes. The individuals from each organisation that were chosen to be interviewed were key decision makers in roles including Farm Manager, Director, General Manager and Farm Owner. Some individuals also operated in multiple roles across the same business or across multiple businesses with a total of seven participants across the four businesses.

The questioning in the interviews was focused on what drives decision-making processes on farm, the long-term visions of the business and then how they have incorporated aspects of te ao Māori and/or mātauranga Māori into their business. The reasoning behind this was also discussed along with any benefits that have been observed from doing so and a discussion around roadblocks or challenges that they have faced prior to, during and post implementing the changes to their operations. A high-level summary of other instances where this has already taken place and the results of this is also included.

Key “themes” identified in the interviews of these farms have been presented in the findings and discussion section of this report. These have been identified through thematic analysis of the qualitative data obtained from the interviews and quotes from the various participants are included throughout this. Where quotes are included that are not from the interviewees and have been sourced from prior publications, the individual responsible and the publication are referenced. A qualitative research approach was taken in this research project as it typically generates “narrow” but rich data and allows for the exploration of differences and divergence within data (Braun & Clarke, 2006).

3.3 Limitations of this research

Of the four farming organisations interviewed, three identify as Māori with the remaining farming organisation being Pākehā. This limits the conclusions that can be drawn regarding the perspectives of Pākehā farmers. The farming entities were spread across a significant area of the North Island in a geographic sense but did not include farms from the South Island or Waikato or Northland Regions. The farming operations are all pastoral farming organisations with one also having an apiculture component and so findings in the report are primarily attributed to these industries and should not be assumed to be representative of the food and fibre sector as a whole.

4.0 LITERATURE REVIEW

To better understand the current knowledge on te ao Māori and mātauranga Māori in an agricultural context, the following topics have been researched and analysed to provide a clearer view on the subject. Given the breadth of information and knowledge present within these areas, it should be noted that this literature review is not exhaustive but aims to provide an overview of the topics with specific relevance to agriculture and farming in Aotearoa.

4.1 Te Ao Māori and Mātauranga Māori in an Agricultural Context

4.1.1 Te Ao Māori

In te ao Māori (the Māori worldview), there is an interconnectedness between the natural world and humanity and as such we are intrinsically linked to the health and wellbeing of the environment in which we live (Harmsworth G, and Roskrug N., 2014). In the context of agriculture, te ao Māori seeks to base business decision-making processes on core values (Kaupapa Māori) and relationships both on a person-to-person level and between the land, environment, animals and people. Te ao Māori also seeks to provide a balance between economic success and the reconnection of iwi and hapū to their respective rohe (Awatere et al., 2017).

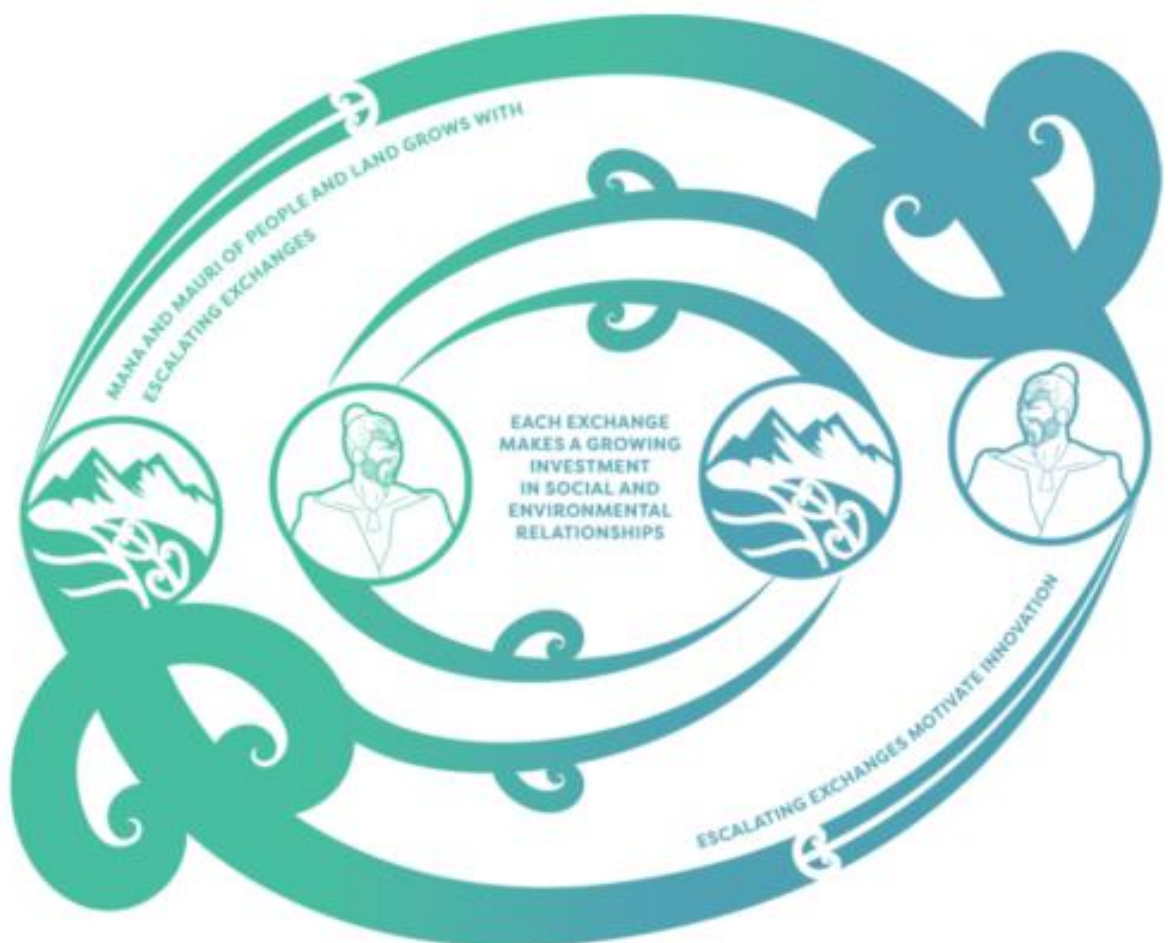


Figure 1: Illustration of the Māori principle of Tautuutu (Reid et al., 2021)

The key components of te ao Māori relative to agriculture are based on a foundation of tauutuutu where exchanges between people and between the natural world result in increasing positive exchanges. This is most clearly illustrated in the quote and figure below from a report being completed by Reid et al. (2021) for Our Land and Water. This concept is fundamentally different to the approach and mindset of the Western farming and cultural model. The closest equivalent is that of reciprocity which involves an acknowledgement of equivalent support or investment in the past.

“Tauutuutu is built on positive escalating exchanges between human people, and also non-human people” “There isn’t really an English language equivalent.” Dr John Reid (2021).

Another core concept of te ao Māori which is particularly important in an agricultural context is that of mauri. The concept of mauri is defined as the life-sustaining capacity of both the environment and society (Reid et al. 2013). Mauri is an important measurement of wellbeing and success from a te ao Māori perspective and in an agriculture context how can one maintain, restore (in instances) and enhance mauri. This applies to all aspects of te ao Māori relevant to agriculture, including the whenua (land), taiao (environment) and tangata (people). As a core principle of managing the land and environment in a sustainable way that increases its ability to provide for generations to come, there is significant value to be gained from having a greater understanding of mauri and how various farming practices, decisions and approaches can impact this, both negatively and positively.

4.1.2 Mātauranga Māori

Mātauranga Māori is a term used to describe the collective knowledge of Māori living in Aotearoa and the knowledge passed down from their ancestors (Stephenson & Moller, 2009). Mātauranga Māori is not confined to one form of knowledge and includes areas such as environmental knowledge (taonga tuku iho, mātauranga o te taiao), traditional cultural practice, cultivation (mahinga kai) along with several others (Science Learning Hub – Pokapū Akoranga Pūtaiao, 2017).

There is significant debate regarding Mātauranga Māori and science (Broughton et al, 2015; Hikuroa, 2017). However, in an academic sense the two do not aim to do the same thing as Mātauranga Māori is concerned with the knowledge of things while science is concerned with how and why things happen (Science Learning Hub, 2017). This allows the two to exist and operate together. Evidence of this is emerging with the growing investment in understanding the knowledge present in Mātauranga Māori at a scientific level (Wehi et al., 2019).

The exploration of what other knowledge and understanding can be discovered as part of this process is key to utilising the full benefit available, but careful consideration of cultural implications needs to be carried out to ensure that tikanga Māori (Māori laws and customs) are upheld (Kapa-Kingi, 2020). Significant areas of Mātauranga Māori have been developed through learned experience and this allows for improvements and additional learning to be added as it is passed on from generation to generation.

4.2 Key Aspects Relevant to Agriculture

In this section, the key aspects of te ao Māori and mātauranga Māori with regard to agriculture are outlined. These are the areas which this report is focussing on as the benefits and advantages to conventional farming of incorporating these practices, value systems and approaches are most significant in the current context of Aotearoa’s agricultural industry. This context is defined further in the following section on the emerging trends and challenges in Aotearoa’s food & fibre sector.

4.2.1 The “quadruple-bottom-line” approach

The acknowledgement of the interrelationship and interconnectedness of all aspects of the natural world in te ao Māori necessitates a more holistic approach to business decisions, particularly in a farming or agricultural context. This is regularly termed the “quadruple bottom line approach” as it shifts from a Western agricultural model of the bottom line having a primarily economic focus to giving equal weighting to the environmental stewardship, social responsibility, intergenerational wealth creation, and cultural revitalisation of the operating entity (Reid et al., 2021). This has begun to change in recent years with the adoption of policies such as the 2030 Agenda for Sustainable Development by the United Nations which details 17 sustainable development goals. This was initially adopted by all member states in 2015 and the goals fall generally under three banners of people, planet and profit (United Nations, n.d.). Other examples of these values in Western concepts are the circular economy and doughnut economics.

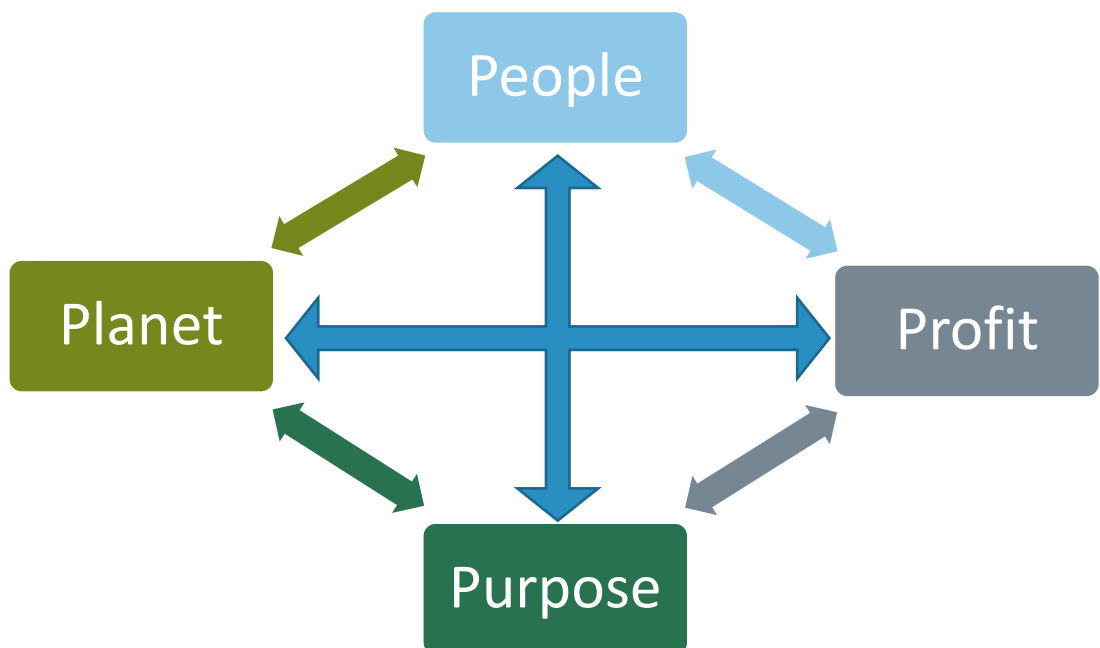


Figure 2: The quadruple-bottom-line approach of Māori agribusiness.

The quadruple-bottom-line approach's intention to give all four aspects equal value is increasingly relevant in the current demand for sustainable business practices (Paul, 2019). This is particularly evident in the growth globally of ESG – environmental, social & governance – performance indicators for the sustainability of a business or investment (Buallay, 2019).

In an agriculture context, this can be interpreted as the “social license” to farm which is becoming an increasingly important factor in how farming systems operate. This impacts on everything from how staff are employed and treated to the welfare of animals and ensuring that they have a productive and meaningful life as well as not only preventing further environmental degradation but taking restorative action in this area.

4.2.2 The intergenerational perspective

The development of mātauranga Māori over hundreds of generations leads to a long-term, intergenerational perspective on the decision-making process (Letica, 2020). This resonates strongly with the food and fibre sector as there is a sense of duty to leave the land and water that farmers care for in good condition for their grandchildren and the generations that will follow. This is further reiterated in the commonly known saying in farming of “we borrow the land from our children & grandchildren”. The depth of this intergenerational perspective within te ao Māori and mātauranga Māori is part of the fabric on which the knowledge and practices are built. This is most clearly evident in the development of 100–500-year plans by Māori businesses under the framework of Kaitiakitanga (guardianship of natural resources) (Paul, 2019).

The recognition of this long-term view of decision-making is growing and is emphasised in the quote below from Reserve Bank Governor Adrian Orr. In the context of agriculture, this perspective of decisions made on farm has huge potential value if used correctly as it allows farming businesses to look to the future and to be proactive in being able to address challenges and capitalise on opportunities when they present themselves (Koroheke, 2019). This takes farming operations out of the everyday running of their businesses and allows them to ensure that they are creating a sustainable farming business that will be here for generations to come.

“The economic practices of your tīpuna are well known to have been and continue to be, long-term and inter-generational. Your investments aim to be values-based in the interests of your mokopuna and their mokopuna.” Quotation from Reserve Bank Governor Adrian Orr (Paul, 2019).

4.2.3 Kaitiakitanga

Kaitiakitanga is defined in a multitude of ways but most commonly it is summarised as guardianship or stewardship. This is generally in the context of land and water but also applies to all other aspects of the natural world (Hutchings et al. 2017). This concept, in the context of agriculture, differs from the Western concept of ownership of the land as it defines people as caretakers of the land and water in particular as well as all living things connected to them. There is also a responsibility embedded within this concept for people to ensure that the land and water are cared for and healthy for future generations. This again aligns with the intergenerational perspective outlined earlier. There is a growing focus on and awareness within the farming community of the impacts of farming activities and a shifting attitude to align more closely with the concept of being stewards of the land and wanting future generations to be able to prosper on it.

4.2.4 Whakapapa & Whenua

Whakapapa (genealogy) is a core principle in Māori culture. An individual's whakapapa not only details their family history, but also links back to the land that their iwi and hapū are connected to in the form of their maunga (mountain) and awa (river) (University of Otago, n.d.). This shows a clear and distinct connection between people (tangata) and the land (whenua) and is reinforced by the indigenous people of a place being referred to as tangata whenua i.e., Māori in Aotearoa or Aboriginal and Torres Strait Islander peoples in Australia. This intrinsic link between people and the land and the way in which it defines an individual's identity demonstrates how important whenua is to Māori.

The concept of the land being an intrinsic part of a human can be easily understood by those in the agricultural community and from rural Aotearoa backgrounds where the connections between where you are from and how you identify yourself are very evident. At a wider level, Aotearoa citizens overseas identifying themselves as "Kiwis" and calling Aotearoa home shows similar links, which while not as deeply held in terms of connections to the natural world, are still strong, nonetheless.

4.3 Challenges & Trends in Aotearoa's Agricultural Sector

4.3.1 Environmental Impact & the Conscious Consumer

The negative environmental impacts of intensive agriculture are well documented and well known in Aotearoa, with increasing levels of scrutiny and regulatory pressure being applied to the industry in recent years. This trend does not appear to be diminishing and the expectations of change in farming practices and the environmental outcomes from them look to be increasing (KPMG, 2021). A key part of the challenge presented by this is the perception of the industry taken by consumers. This presents both a challenge and an opportunity for New Zealand agriculture to derive significant added value without further environmental degradation and as part of restoring and highlighting the positive environmental work being carried out (KPMG, 2022).



One trend related to reducing the impact of agricultural practices is that of “Sustainable or Regenerative Agriculture”. There is growing interest both domestically and globally in this concept as it recognises the importance of agriculture and food production but aims to do so without causing undue harm to the environment (Perceptive, 2019). This concept has a multitude of descriptions but by design hasn’t been defined in any significant way other than that its key intention is to improve the health of the soil (Rhodes, 2017). This concept brings into focus a holistic view of farming practices in that it requires farmers to consider the wider implications of their management decisions and to ensure that the negative aspects are minimised or eliminated. Demand for sustainably produced food is growing significantly and consumers are prepared to pay a premium for this in some markets, while in others it is fast becoming a requirement to even be present (CGS, 2019).

The term “conscious consumer” is a recurrent theme and topic for agricultural exporters in Aotearoa. This term has typically been used to describe environmentally conscious consumers (Gan et al., 2008) but in recent years this has expanded to take a more holistic view of sustainability in agriculture encompassing aspects such as animal welfare and carbon footprints of products (Perceptive, 2019). The importance of meeting consumer demands for Aotearoa’s agricultural industry is paramount for the various sectors to maintain the status as one of the premier agricultural producers globally. This allows for premiums to be earned on products and increases the opportunity for increased value to be added through the use of mechanisms such as market claims.

4.3.2 Export Market Volatility & Uncertainty

KPMG’s agribusiness agenda for 2022 highlights Aotearoa’s historical competitive advantage as being able to grow pasture and convert this into protein in the form of meat and milk using a low-cost system. While we are still leading the world in terms of pasture production, the low-cost farming model’s existence has been significantly reduced which has affected our competitive advantage on an international level. This then requires a mindset shift to think about how we as a nation can derive further value from our agriculture sector (KPMG, 2022).

As an industry where 80% of beef, 90% of wool, 95% of sheep meat and 97% of dairy product is exported (Prosser, 2017) and Aotearoa's geographic isolation from all major markets except Australia, agriculture is heavily reliant on a resilient supply chain. This was most evident in the disruption caused globally to shipping networks through the impacts of COVID-19 and the Suez Canal blockages in 2021 which had significant financial and reputational implications for Aotearoa's agricultural sector.

KPMG state in their Agribusiness Agenda 2022 that these disruptions will be further compounded by the war in Ukraine which is having significant implications outside of simply disrupting port activities in eastern Europe (KPMG, 2022). The need for and benefit of having strong relationships and collaboration is highlighted in the results achieved by Kotahi, a joint partnership founded by Fonterra and Silver Fern Farms, which in a year of unprecedented disruption to global shipping networks managed to deliver a record shipment volume for Fonterra (Kotahi, 2021).



5.0 INTERVIEW FINDINGS & DISCUSSION

5.1 The Importance of Kaupapa in Decision Making

Kaupapa is defined as the set of values, principles or plans which form the foundation for actions to take place. An equivalent western concept is Simon Sinek's (2009) "Start With Why" where in order to be truly successful, businesses need to have a strong understanding of and belief in why they do what they do. This then flows through into how the business acts and ultimately what is achieved. The importance of Kaupapa in the decision-making process has been highlighted in all of the interviews undertaken and is reinforced in research by Awatere et al. (2021) which focuses primarily on kaupapa Māori but also recognises the value of Pākehā kaupapa. The key benefits identified are that having a clearly defined and well-thought-out kaupapa provides a framework for business decisions to be measured against. All four interviewees discussed the kaupapa of their business being core to their decision-making process and the clarity they have had in making decisions both large and small since implementing their kaupapa.

"The Kaupapa drives our business and frees our thinking within a framework to move forwards without limitations" – interviewee farmer

The concept of Kaupapa is almost identical to "Starting With Why" (Sinek, 2009) in that, an organisation or group of people will agree on their guiding values and principles of how they wish to operate and decisions are made based on these. The flow-on effects of having clarity and belief in why a business or group exists and what it is trying to achieve gives clear guidelines of what should be considered when making decisions and where the business is aiming to head. This was evident in that the direction of travel for all four farming operations has become clearer since implementing their kaupapa and the pace of progress has accelerated for all alongside this.

"If it aligns with your values and you have trust in them then you are in good stead to make good decisions" – interviewee farmer

"We always go back to our vision statement: to operate a tidy, efficient, profitable, modern, family-run farming business alongside the environment with minimal impact. If a decision fits these values, then we get on with it and if it doesn't then we park it." – interviewee farmer

The benefits of implementing kaupapa Māori are not isolated solely to the decision-making level in that the core values of a business or organisation can be determined and contributions from all stakeholders, including staff and employees, can be incorporated. This also includes looking toward the future and making a long-term plan of what the aims of the business or group are, how they want to achieve them and most importantly, why they want to achieve these goals. This is reinforced by the research completed by Walker et al. (2021) which discusses the 25-year, 50-year and 500-year planning of three Māori organisations.

The value present in this for agriculture as a whole is to consider the wider implications of decisions and to contemplate the long-term impacts of these decisions for future generations as well as the work carried out by previous generations. The process of changing the business structure to have kaupapa Māori as the foundation has been described by two of the interviewees as being very challenging to begin with but incredibly rewarding and they are now seeing a much wider acceptance and appreciation for the value present in doing so.

“When we first wanted to apply our values to the business, I was told to just focus on profit maximisation and I said to them when I look at these hills I see the faces of my grandchildren, I see my grandparents’ faces, so I can’t do that.... this has started to change in recent times and it’s really nice to see those shifts happening” – interviewee farmer

“The process of implementing our kaupapa has been incredibly challenging and rewarding, challenging in that to put it in place there was a lot of pushback for a long time because farm owners didn’t understand what it was we were trying to achieve but also rewarding in that seeing the change in their attitude now that they’re seeing the work we’re doing and the rewards we’re reaping from taking this approach” – interviewee farmer

5.2 Taking a Holistic Approach through Kaitiakitanga

As explained previously, Kaitiakitanga is most commonly explained as guardianship or stewardship and in an agricultural sense, it is typically used in the context of environmental stewardship and being caretakers of our environment and the natural world. This creates an appreciation and awareness of how various factors in farming systems interact and how management decisions in one area can have flow-on impacts through these interactions. The degree to which Kaitiakitanga has been implemented varied across the four farming businesses but the common theme that emerged was that environmental stewardship and the mauri and health of land and waterways are at the forefront when making decisions on farm.

“While there is a quadruple bottom line approach with equal weighting to all four, in all truth, we may do things to protect the environment which negatively affects our economic performance... and if you free your thinking up from solely focussed on profit maximisation, you will be amazed by what you can achieve.” – interviewee farmer

“Focussing on the whenua, people and animals and achieving what we want to financially is the basis of what we consider and if it looks after these then it fits with our Kaupapa and our strategic plan.” – interviewee farmer

The holistic approach to farming, whether it is in the form of organic or regenerative agriculture, is receiving exponentially increasing levels of attention and participation both domestically and internationally. The links present between this approach to farming and utilising mātauranga Māori were evident in three of the four farming operations where signals and cues taken from the natural environment that have been learned through the powers of observation over long periods of time. The practice of following Maramataka (the Māori lunar calendar) is undertaken on two of the four farms which categorises periods of high energy, low energy, productive energy and unpredictable energy phases which determine when activities such as cultivation, sowing and mating occur. This practice has seen significant benefits in practical measures such as increased crop yields and higher survival rates of native plants. This is one of a number of practices which is worthy of further research and investigation as has been outlined by Grelet & Lang (2021).

“Don’t rely on the calendar to be your absolute marker for activities as every season is different and taking note of the natural world to indicate when seasons are changing and signals from nature on seasonal variation.” – interviewee farmer

“To make sure that the silo effect doesn’t happen, that it’s not about water, it’s not about land, it’s not about people, it’s about the whole ecology, the whole ecosystem.” – interviewee farmer

“Regenerative Agriculture and te ao Māori have lots of the same principles in that the whenua or soil is at the core and focussing on the health of the soil will help the plant to grow which will allow you to produce the milk.” – interviewee farmer

5.3 The Value of Whanaungatanga

The concept of Whanaungatanga can be summarised as a relationship through working together or shared experiences which create a sense of belonging among people. The importance of strong relationships and connections in an industry like agriculture is profound. This importance is further elevated given the small size of Aotearoa's agricultural industry when viewed on a global scale. When put in te ao Māori framework, relationships and connections are central and form the foundation of belief systems and practices as they are central to the concept of tauutuutu (Reid et al. 2021).

“Māori have been seen to drag the chain in agriculture in the past but now are starting to be seen to be leaders by acknowledging mātauranga Māori and doing things a different way.” – interviewee farmer

The value of strong relationships created with a long-term perspective and aim is also clearly highlighted in the example of Kotahi which started as a joint partnership between Silver Fern Farms and Fonterra over ten years ago. This partnership has had additional partners join who have recognised the advantages and benefits present such as Aotearoa Wool Services and strategic partnerships with Maersk as well as Port of Tauranga. The value and advantage present in this long-term relationship are evident in that Kotahi has delivered record export volumes during a period of unprecedented supply chain disruption (Kotahi, 2021).

“Deep connections and relationships bind together businesses and supply chains, and individual small connections are all valuable to strengthen the overall relationship.” – interviewee farmer

The following image is an example of what developing strong connections can achieve in a farming business where an individual farming family have worked with their local community to construct a pā on their farm utilising the guidance of local iwi to ensure cultural protocol was observed and that the site was blessed before use. This has resulted in further opportunities for the farm to expand the nursery with the support of local iwi thanks to the relationships that have been developed through this process of community involvement and engagement.



Figure 3: A traditional tuwhatawhata [palisaded] pā named Ōhaurai which has been constructed on a farm near Hāwera to protect a propagation house (Rongo-marae-roa) and a smaller shade house (Tane Mahuta).

The benefits available through incorporating Whanaungatanga into business and farming operations are clear when a wider definition of success than simply financial performance is embraced. Regarding Whanaungatanga specifically, the value that can be obtained for a business through altering practices is to put the community at the centre of management decisions. This is particularly evident in how many Māori organisation boards are elected, through a process of democratic election by their community, versus the typical western business model where new members are appointed by current members based on their business acumen (Walker, 2021). As shown by Rout et al. (2021) there are also financial benefits to strong Whanaungatanga within a business as deep connections correlate strongly with profitability and whenua health.

“Everything we do is more than just a transaction...people are looking for more than the traditional transactional business relationship... we want long-term relationships that have the same values as we do.” – interviewee farmer

“The power of what belonging can do and be for people and business. When people feel like they truly belong there’s a lot more that goes into effort and aspirations.” – interviewee farmer

6.0 CONCLUSIONS

Aotearoa’s agricultural sector has a long history of thinking outside the box, the “number 8 wire’ mentality or “kiwi ingenuity” are two phrases that are directly a result of farmers in Aotearoa taking a step back when faced with an issue or a challenge, looking at what tools, knowledge, and resources they have available to them and creating an ingenious solution to an often-complex problem. This is no different to the challenges facing agriculture in the 21st century where consumer demands dictate farming practices which are being put under an ever-increasing amount of scrutiny and focus. This can either be looked at as a burden the industry must bear, or it can be viewed as an opportunity to take a step back and reassess the situation with an open mindset and take stock of unique knowledge such as mātauranga Māori, tools in the form of concepts present in te ao Māori and resources in the form of iwi who can provide guidance on how these can best be utilised to draw the greatest benefit for all while maintaining tikanga.

“Having an open mind and an open heart will help to shift the dial and respect that there may be another way of doing things.” – interviewee farmer

There is a vast amount of previously underutilised expertise and knowledge present in mātauranga Māori and while there are increasing levels of interest and research taking place to help unlock the benefits present, great care must be taken to ensure that research in this area is guided by tikanga and remains grounded in te ao Māori. This will ensure that any new information generated through researching cultural concepts maintains its integrity by following cultural practice and protocol.

The single largest barrier identified through the interviews was the closed mindset of both farmers and rural professionals to alternative or new ways of thinking. In the case of te ao Māori and mātauranga Māori, this isn’t even a new way of thinking, it is simply new to individuals who have only experienced a Western farming and science framework. This reluctance to be open to different approaches and new ideas, if not corrected, will lead to a stagnating of progress within the agricultural industry and at a time of such rapid progress and change, this will mean Aotearoa’s agricultural sector will move from being world leaders on many fronts to being left behind.

7.0 RECOMMENDATIONS

- ❖ Have patience and persistence in understanding the perspectives of Tangata Whenua and involve Tangata Whenua at all levels in governance and decision-making processes to ensure the best long-term outcomes are achieved on a consistent basis for communities and the environment.
- ❖ Creation of think tanks or collaborative projects focused on the agricultural sector with individuals from diverse backgrounds encouraging open thinking and interpretation of ideas.
- ❖ Encourage the uptake of new and novel approaches within farming and agricultural businesses as well as experimentation and trialling both on-farm and within business models.
- ❖ Cultivate a culture in agriculture of combined and cross-cultural thought processes where utilising western technological advancements within te ao Māori frameworks is celebrated and encouraged.
- ❖ Facilitate the development of kaupapa for farming businesses utilising te ao Māori to embrace wider definitions of success.
- ❖ Create a platform for meaningful and genuine engagement between iwi, hapū and industry to take a collaborative approach to the generation of solutions for the multitude of wicked problems facing both the agricultural industry and the communities it is present in.

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9.0 APPENDIX

Semi-structured Interview Key Questions

1. What are the key drivers or motivating factors when it comes to decision-making on your farm?
 - a. In terms of decision-making or planning, what has the greatest influence on the purpose or aims and why?
 - b. For short-term or seasonal decisions and plans, what is considered in this process and why?
2. What has driven you to incorporate te ao Māori into your farming business?
 - a. Which beliefs or practices have you implemented and why have you chosen them for your farm?
 - b. How long have you been using these, and will you continue to use just them or add more?
3. What benefits have you seen from incorporating te ao Māori into your farming operation?
 - a. How have you identified these benefits?
 - b. What lessons have you learnt along the way?
 - c. How have these lessons and benefits affected your perspective & farming practices?
 - d. What has surprised you both negatively and positively from the changes you have made?
4. What has previously held you back from incorporating these practices into your farm?
 - a. How have these things held you back?
 - b. What was the tipping point for you in committing to the changes you have made?
5. What challenges have you faced when trying to make the changes required?
 - a. How did/have you overcome these challenges?
 - b. What could have helped to make these easier?
6. Are there any areas or practices you think could benefit other farmers?
 - a. Why do you think there hasn't been a greater uptake already by farmers?
 - b. What do you think could help to increase this?