

Opportunities for Māori Enterprise in Singapore

A Food and Fibre Perspective



Southeast Asia
Centre of Asia-Pacific
Excellence



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Scope of this report

Over the past century, food and fibre systems have rapidly transformed across the world. Economic, political, socio-cultural, and technological shifts have created a food system that is increasingly globalised and incredibly complex. In addition, the way that foods and fibres are produced and consumed varies tremendously from place to place.

A global food system presents many challenges and opportunities for ensuring a healthy and equitable world that is always transforming. Singapore and Aotearoa New Zealand have some similar, and some very distinct, challenges when it comes to fostering a sustainable food system. This report will set out the context for food systems in Singapore and Aotearoa and explore how Māori can engage with Singapore through food trade to benefit both parties. It will discuss some key opportunities for Māori and how these can be harnessed to improve Māori wellbeing and economic success.

Informed by our experiences during the Southeast Asia Centre of Asia-Pacific Excellence's Tertiary Market Immersion Programme in Singapore, this report presents the perspectives of three young Māori professionals with expertise in nutrition, environmental advocacy, and forestry. We discuss the future opportunities in Singapore for Māori entrepreneurs, students, and organisations in Singapore, as well as the capabilities, networks, and workforce requirements to facilitate such opportunities. Drawing on our lived and in-market experiences, we also highlight the challenges that Aotearoa must address and suggest recommendations to effectively act on these opportunities.



Introduction

Aotearoa's relationship with Singapore

Singapore is an island state located at the bottom of the Malay Peninsula in Southeast Asia. Aotearoa is a larger island country in the bottom left corner of Te Moana Nui a Kiwa, the Pacific Ocean. Although these nations are far apart geographically, they share a long cultural and economic relationship.

Māori, the indigenous people of Aotearoa, migrated to Aotearoa from Hawaiki in the Pacific, and are said to have previously migrated from the West Pacific. As a Polynesian people, Māori historically interacted with people across the Pacific, engaging in food trade as far away as South America. However, while Māori have long excelled in global trade, they are not currently prolific exporters and do not engage with Southeast Asia to a significant extent.

Many Māori see themselves as having shared cultural perspectives with Asian cultures (Asia New Zealand Foundation, 2019). Both Māori and Singaporeans experienced colonisation by Britain, yet both emerged with a strong sense of self-identity and determination. There are major opportunities for Māori in Southeast Asia for workforce development, innovation, and economic diversification.

Currently, the Māori economy has a significant stake in agricultural commodity trading. However, this is vulnerable to climate change, policy shifts, and the circumstances of a global economy. Māori also continue to contend with a settler government and disparities across education, health, business, and political power.

Food and fibre systems in Aotearoa

A brief historical context

Māori arrived on the shores of Aotearoa in waves, coming from more tropical and warm settings to a colder, cloudier climate. To survive and thrive, Māori had to rapidly adapt their practices and foods to their new Pacific home. Over time, Māori developed a deep and intricate understanding of the native foods available, while adapting the ones they had brought with them.

The original food system of Aotearoa was based on communal responsibilities for cultivation, gathering, and hunting, which varied according to patterns in nature. Obtaining and using fibres were similarly managed. The arrival of Europeans to Aotearoa in the late 18th century brought significant change to Māori societies. New plants, animals, and technologies were introduced, and these had both positive and negative impacts. While increasing the variety of foods and fibres available and enabling Māori to capitalise on their horticultural expertise for economic trade, they also disrupted traditional Māori practices and the balance of the ecosystem.

Māori alienation from ancestral lands, as a consequence of the Crown's colonising policies and institutions, preceded the transformation of landscapes for a modern, global food and fibre system. Yet, Māori still navigate landscapes with diverse intents, often with collectivist motivations and goals for wellbeing.

Challenges for Aotearoa's current food and fibre system

Today, food and fibre still play a significant role in life and business in Aotearoa. Over 60% of exports are food, of which dairy is the largest segment (New Zealand Ministry for Primary Industries [MPI], 2023a). Forestry also contributes to 1.6% of GDP with a gross income of NZ\$6.6 billion in 2022. This is set to rise in the next decade due to log cut volumes (MPI, 2023b).

While the primary industry has brought economic benefits, the transformation of ecosystems for economic activities has led to significant changes in land use and has had negative impacts on the natural environment.

- Large areas of land have been converted from native habitats for agriculture over time, leading to the loss of native vegetation and habitat for many native species. This has contributed to a major decline in biodiversity in Aotearoa (New Zealand Ministry for Environment [MFE], 2019).
- Intensive farming practices have led to significant soil erosion in many parts of Aotearoa. This has resulted in the loss of topsoil, which is essential for plant growth and can lead to decreased productivity of farmland.
- Agriculture is the largest contributor to our greenhouse gas (GHG) emissions in Aotearoa, accounting for nearly half (49%) of the country's total emissions. Most of these emissions come from ruminant livestock, nitrogen-based fertilisers, and animal waste management, emitting a total of 37.8 Mt CO₂-e in 2021.

- Agriculture is a major contributor to water pollution in Aotearoa, particularly from nutrient runoff and sedimentation. Fertilisers and animal waste can cause excess nutrients like nitrogen and phosphorus to enter waterways, leading to algal blooms and oxygen depletion. Sedimentation from soil erosion can also negatively impact water quality.

The Aotearoa government has attempted to implement policies to reduce emissions, but there has been significant pushback from some groups in the primary sector. Globally, an increasing interest in low carbon economies may mean that unless Aotearoa makes significant adjustments to the sector to reduce emissions, it is likely that our export and trade internationally will be impacted.



The Māori economy has a significant stake in primary industries, which are both vulnerable to, and contribute to, environmental shifts like climate change. A resilient and healthy future for Māori will involve transforming food systems to better serve nature and enable Māori to undertake traditional and contemporary food procurement. Moreover, Te Ōhanga Māori 2018: The Māori Economy 2018 report highlighted several systemic challenges facing Māori people and economies:

- Wealth inequality negatively impacts wellbeing and prosperity. For example, there is a persistent ethnic income gap, and Māori businesses have limited access to capital, hindering investment in innovation and technology to facilitate growth.
- There is a lack of targeted policies to address workforce development. A shortage of skilled workers impacts the ability of Māori enterprises to participate fully in the economy. Skill transition and workforce development requires a multi-generational effort to address labour market failures to lift the wellbeing of Māori people and enterprises (Nana et al., 2021).

These challenges highlight the need for greater collaboration and partnership among Māori businesses, government, and other stakeholders to help create a more vibrant and sustainable Māori economy. This could include helping Māori businesses access markets and technology that can develop sustainable and environmentally responsible practices, as well as investing in education and skill development for Māori workers.

Furthermore, Māori leadership is needed to change our food and fibre system to incorporate core values of environmental, social, and cultural wellbeing. This will include the preservation of traditional food sources and the promotion of food sovereignty, all of which can help to create a more resilient and equitable food system.

Frameworks for food and fibre transformation

Aotearoa's experience in the primary sector has prepared us well for future transformation. Our expertise in food and agriculture can be applied to small and emerging sectors, like alternative proteins and value-added foods.

In July 2020, during the COVID-19 pandemic, the government released a 10-year roadmap for transforming the food and fibre sector in Aotearoa. Fit for a Better World (FFBW) outlines ambitious goals for creating a more sustainable, productive, and inclusive economy (MPI, 2021). It provides a roadmap for the food and fibre sector to become a low-emissions, high-value industry; to restore water health and reverse biodiversity decline; and to create modern regenerative production systems that are fit for a better world.

In April 2022, the food and fibre sector think tank Te Puna Whakaaronui released the WELL_NZ report, which identifies the converging global drivers of climate change, increasingly complex consumer preferences, and technological advancements (Te Puna Whakaaronui, 2022). This study, in conjunction with FFBW and the Ministry for Primary Industry's strategic plan, serves as the Manatū Ahu Matua plan. The plan will support the Māori food and fibre sector in navigating global drivers and realising opportunities for prosperity that are aligned with Māori values.

Food and fibre systems in Singapore

Singapore has similar transformative goals for their food system. A vibrant nation of 5.8 million people, Singapore has experienced one of the fastest periods of growth of any Asian country in the last century. Singapore's growth has been driven by its strong focus on international trade and investment. Its strategic location in the centre of Southeast Asia has made it an ideal hub for international trade and commerce.

Manufacturing, innovation, and finance characterise Singapore's dynamic economy, and the government invests heavily in policies that support economic growth through innovation and international trade. Singapore has a strong network of free trade agreements. Moreover, its finance sector is recognised as one of the most developed in the world due to its strong regulatory frameworks that are pro-business, attracting investment and a highly skilled and diverse workforce from around the world.

Since the 1960s, Singapore's population has significantly grown through immigration, which the government has encouraged to attract highly skilled workers. As a result, Singapore is one of the region's most diverse nations, with a highly multicultural population and a large number of foreign-born workers. The population growth has put pressure on Singapore's limited land resources (total land area of 728km²), which has fuelled significant high-density urbanisation and created social and environmental challenges.

Singapore relies heavily on imported goods to feed its population; it imports over 90% of its food supply. In response, the government has implemented a '30 by 30' national food security strategy to increase local food production to sustainably produce 30% of the country's nutritional needs by 2030 (Singapore Food Agency, 2023).

To achieve this goal and improve food resilience, Singapore has been investing in innovation to create alternative protein sources (e.g., plant-based foods) and exploring local farming methods (e.g., vertical farming).

Singapore does not have significant domestic production of fibre products due to its limited land resources and lack of natural forest cover. As such, Singapore relies heavily on imports to meet its demand for wood products. In recent years, there has been a growing interest in sustainable and environmentally friendly building materials in Singapore. As a result, there has been a push towards the use of wood products that are certified by internationally recognised organisations such as the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC). The need and interest in sustainably sourced fibre products may be an opportunity for Aotearoa, if local industry can address environmental challenges.

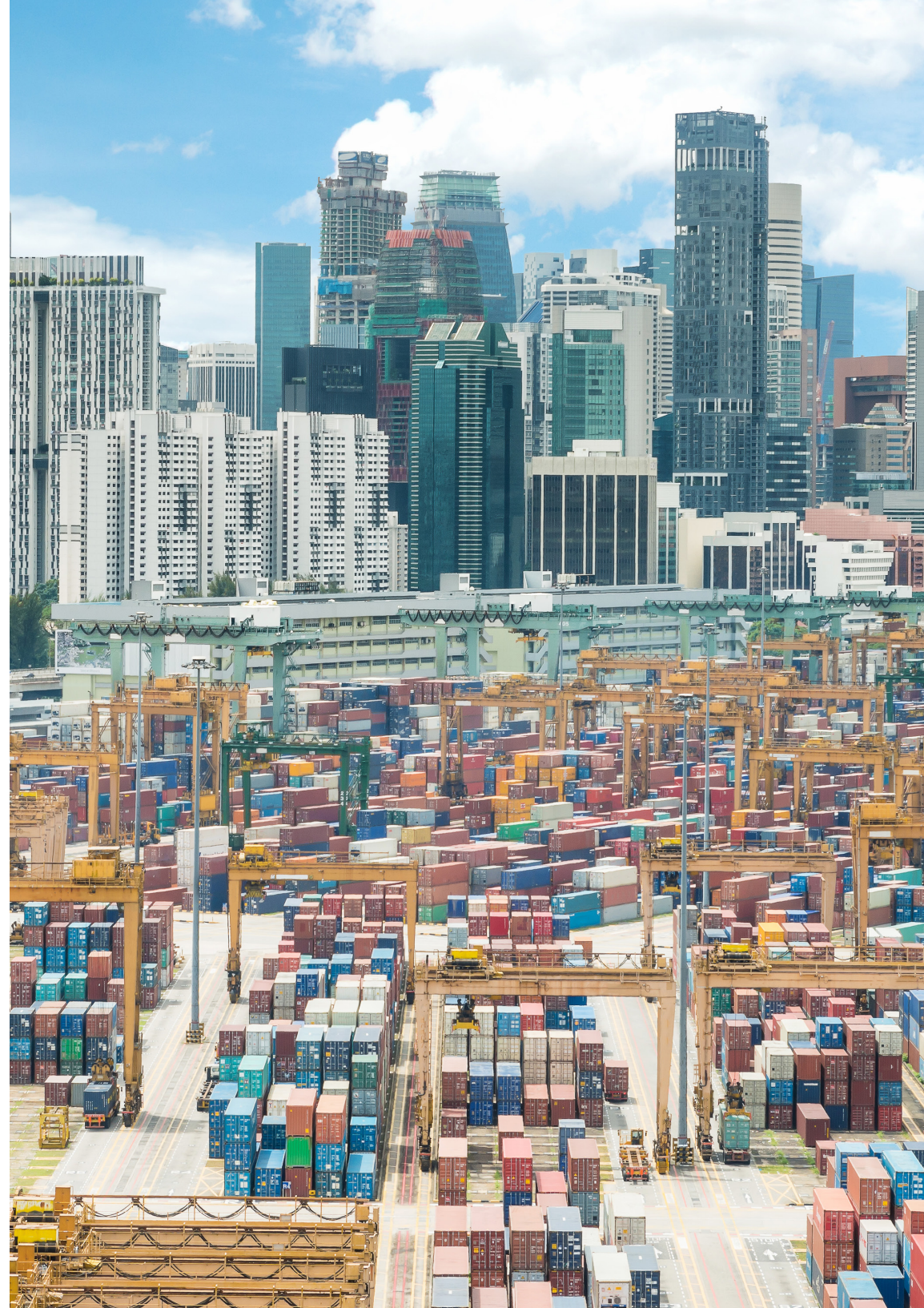
The labour market remains one of Singapore's weak points, despite the key opportunities it provides. Although upskilling is a focus for employees, restrictions on foreign labour are tightening, potentially increasing staff shortages in already heavily affected sectors (Singapore Economic Development Board [EDB], 2023). With reduced available labour and high wage/employee retention fees, the costs to enter the Singapore market are high and rising.

Collaboration between Aotearoa and Singapore for better food and fibre systems

Aotearoa and Singapore have a rich shared history and strong economic ties. In 2020, the existing free trade agreement between Aotearoa and Singapore, the Closer Economic Partnership (CEP), was upgraded to the Enhanced Partnership Agreement. The new agreement aims to strengthen bilateral cooperation and relationships in the areas of trade, security, science, and innovation (New Zealand Ministry of Foreign Affairs & Trade, 2019).

Supported by investment from both governments, the New Zealand-Singapore Bilateral Research Programme on Future Foods has facilitated collaborative research projects among universities, institutes, and industry partners in both countries. The objective of the programme is to develop innovative, sustainable, and resilient solutions for future food systems in the Asia-Pacific region (New Zealand Ministry of Business, Innovation & Employment [MBIE], 2020).

To date, this is Aotearoa's largest single investment in a bilateral science partnership. It will strategically bring together the expertise and resources of both countries to accelerate the development of future food capabilities to collectively tackle current and future food system challenges.



Māori enterprise in Aotearoa and Singapore

Māori business in Aotearoa

Māori businesses have a unique values-led approach to enterprise, which differentiates them from more profit-driven businesses through their ability to generate multiple forms of capital. Māori businesses have been defined as those that self-identify as Māori, apply Māori values to their practices, have 50% or more Māori ownership, and contribute to collective Māori wellbeing (Mika et al., 2019). Māori enterprises are usually more attentive to human and environmental wellbeing and seek to create multiple positive social, cultural, economic, and environmental outcomes.

The Māori economy has significant investment in primary industries, with 34% of all assets in this sector. In recent years, the Māori economy has grown and diversified significantly, a trend that is expected to continue. Other favourable trends include an increasing adoption of tikanga in a commercial context, increased clout for Māori in the political sphere, and a progression in indigenous rights law following the landmark Wakatū decision. Together, these trends bode well for growth in Māori food innovation. Māori can use their strong traditions of adaptability to pursue sustainable and innovative enterprise in the food and fibre sector.

A Ministry for Primary Industries agribusiness innovation fund has been established to encourage innovative food enterprise by Māori. Te Puni Kōkiri, the Ministry of Māori Development, also provides a range of support services for Māori businesses, including land-specific development (Te Puni Kōkiri, 2023). The Ministry of Primary Industries also has several support programmes for Māori business (MPI, 2023c).

Māori business in Singapore

There are several pathways for unlocking Māori potential in food enterprise. Understanding how Māori can benefit from engaging with specific regions and nations will contribute to Māori flourishing in Aotearoa.

Any business aiming to export into Singapore needs to spend time in market to understand the consumers and develop meaningful relationships. Consideration needs to be given to how potential products communicate effectively with multiple cultures, as this is part of Singapore's unique business environment. Businesses also need to be clear on their value propositions and understand whether the value they add aligns with consumer needs. It is imperative that businesses have a long-term vision. Future trends and challenges should inform forward planning (e.g., digital developments and carbon economies) and consideration must be given to their potential impacts across value chains.

Singapore's multicultural population and its widely varying and distinct food cultures create a diverse domestic food landscape. Singapore is known for its highly efficient food distribution system, and it also boasts a network of supermarkets, wet markets, and hawker centres (street food markets) that cater to and reflect diverse consumers. Accordingly, Singapore is often perceived as a springboard to the rest of the Southeast Asia region, because it enables testing of purchasing behaviours across the diverse communities that occupy the region.

The diverse multicultural landscape of Singapore and its proactive government, which actively invests in innovation, empowers Singapore to be good at food innovation. Singapore is well recognised as a hotbed of innovation, and its population and workforce are fast adapters of technology.

This is in part due to large research and development investments in the food sector, which is well resourced through government funding. This capital investment drives cross-sector innovation and collaboration, further fuelling the entrepreneurial food start-up culture that is now emerging in Singapore. These businesses are developing new and innovative food products (e.g., alternative proteins) and solutions (e.g., up-cycling waste streams), via access to the first-class facilities, scientific expertise, and innovative technologies that are readily accessible in Singapore (Innovate 360, 2023).

Food security, sustainability, health, and wellbeing are growing consumer trends and are top of mind for many countries given our interconnected global food system. External shocks and pressures to our food systems are predicted to increase in severity and frequency over the coming years, driven by climate change. This amplifies the need to develop sustainable food security. However, this requires data, technology, and food innovations that can work together to create systems that are crisis proof.

Globally, exporters with low emission strategies and products have growing opportunities, and this is likely to only increase in the future. Singapore is an ideal test market for such products in the Southeast Asia region, particularly given the government's focus on innovation, sustainability, and reducing its carbon footprint.



Challenges for Māori economic prosperity

For many Māori businesses and entrepreneurs, economic prosperity is interlinked with cultural, social, and environmental wellbeing.

Challenges for Māori food exporters

From a te Ao Māori perspective, food is not merely a commodity. It is deeply embedded in a worldview that animates the universe through relational connections. As a result, a global, market-based food system may present some challenges to Māori wanting to export food.

Protecting cultural knowledge and heritage

Māori place great importance on protecting taonga, mātauranga, and nature for current and future generations. The cultural and intellectual property of Māori, native species, mātauranga Māori and te Reo Māori are often used by businesses and institutions for international trade without seeking prior informed consent or mandates from Māori. Similarly, the benefits that arise from their use are often not shared with Māori.

Māori food products, particularly those involving native species, represent relationships. When exporting these products, it is important that this is done in a way that accurately reflects their cultural and historical significance. There are also significant challenges in protecting the cultural information in a product.

The Aotearoa legislative system has yet to respond to recommendations to protect Māori cultural heritage and associated intellectual property. Moreover, it can be even more difficult to protect Māori intellectual property once it is exported.

A recent example of the need for a considered approach to ensure that Māori cultural and intellectual property rights are appropriately protected is mānuka honey. This honey is made by bees from the nectar of the plant *Leptospermum scoparium*, or 'mānuka' in te Reo Māori, and it is revered as a taonga. Yet, with its commercial interest internationally, significant research has been done in Aotearoa and offshore that gives little consideration to ownership of the plants or possible commercial outcomes that will extract value from this taonga (Morgan et al., 2019).

Tension between food export and food sovereignty

Food export and food sovereignty are two concepts that occasionally are in tension with each other. Food export refers to the production of food in one country that is exported to other countries to meet their food needs. This can be economically beneficial for countries that have surplus food production and for food security in countries that import the food. However, there are also risks associated with food export, including the potential for food shortages in the exporting country and dependence on foreign markets for income.

Food sovereignty is the concept of ensuring that a country's population has access to sufficient, safe, and nutritious food supply that is culturally appropriate and produced in a sustainable manner (Via Campesina, 2003). This involves prioritising local food production and consumption. By promoting local food systems, food sovereignty aims to ensure that food is accessible and affordable to all members of society and that food production practices are environmentally sustainable. Food export and food sovereignty are not necessarily oppositional in their goals and can support each other (Burnett & Murphy, 2014). For Māori businesses, exporting may be one pillar that can contribute to economic and social wellbeing.

Breaking into new markets

Food and beverage products must be safe for human consumption and must meet all relevant domestic food regulations, as well as those of the destination market. Regulatory requirements can impact market access, how a product can be sold, and what can be said about it. Therefore, it is imperative that food regulations of the domestic and destination markets are considered throughout the development process.

Māori food products may face barriers to entry in international markets, such as regulatory requirements or cultural differences. For example, a plant that has been traditionally consumed in Aotearoa may be considered ‘novel’ in domestic or destination markets, either because the plant itself does not occur there, or how it is prepared and consumed in a new way. This can create scale issues, as a company needs to meet the demand of larger markets than those it serves domestically.

It is important to work with government agencies and industry partners to ensure that Māori food producers have access to international markets and that products are marketed effectively to the target audience. For example, health claims can add value to a product and serve as ‘proof’ of functionality. Globally, regulatory agencies allow manufacturers to leverage off the current scientific evidence to use food-health claims on food and beverage products, provided they meet their regulations to do so. However, not all ingredients or foods have scientific evidence that substantiates safety and efficacy to prove a food-health relationship.

To support commercial innovation and market entry, any investment to develop scientific evidence to demonstrate a food-health relationship should be collaborative across industry and science sectors.

This will reduce individual company costs and accelerate the process, and it will ensure that studies are well-designed, supported by sound science, and meet the needs of the various stakeholders (i.e., producers and end users).

Involving the right expertise during key development periods is critical. Food regulatory experts, food technologists, and new product development and commercialisation specialists need to work closely with individuals from the science, research, and innovation sectors. This will ensure that scientific studies meet market regulations, commercial requirements, and high scientific standards.



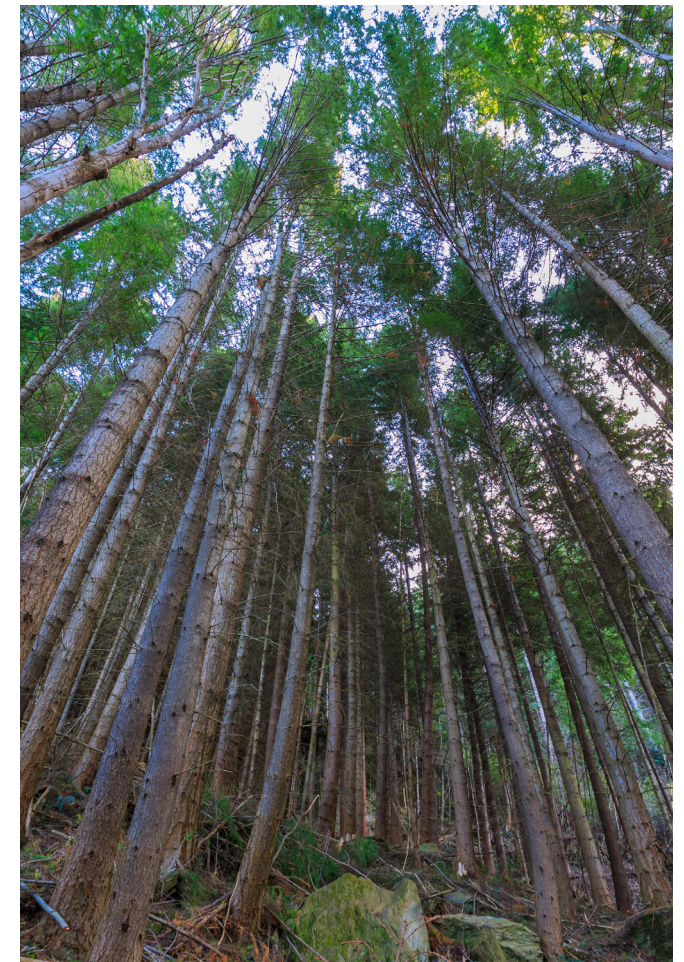
Challenges for our forestry sector

A contrast between Māori and Singapore is the difference in productive land, which has the potential to benefit both parties. Māori own approximately 48% of commercially planted forest land in New Zealand, and this is set to increase as Treaty of Waitangi settlements conclude (Scion, 2023). In 2022, the total export revenue for forest products was \$6.64 billion (MPI, 2023b). However, despite owning a considerable proportion of forested land, Māori do not often see a similar share in profits. There are many ‘fingers in the pie’ when it comes to managing forestry resources, and high volumes of raw material are frequently exported for relatively low value.

Māori forest land is primarily planted on marginal land with a high probability of erosion. Commercial plantations reduce the risks of erosion while planted, but the harvesting of trees can lead to massive slips and other environmental degradation. With the growing interest in planting forests for carbon credits, there are likely to be many changes to the industry, which will inevitably affect Māori as a significant forestry landowner.

Māori also make up a substantial proportion (34%) of the forestry workforce (MBIE, 2018). In rural areas such as the East Coast of the North Island (Gisborne), Māori make up 80% of the forestry workforce (Tairāwhiti Regional Skills Leadership Group, 2022). Most of these workers are in entry-level jobs and are not included in leadership roles or decision making. Many of these workers are young Māori who have not pursued higher education, which could be due to many factors such as their environment, lack of access to tertiary education, and not having appropriate support (e.g., financial, mentors) to develop skills.

The role of Māori in the forestry value chain is becoming increasingly important, and Māori want to actively participate in higher-skilled forestry jobs such as growing and wood processing. However, to do so in Aotearoa, Māori need to attend either a polytechnic or university to gain the necessary skills and experience.



Challenges for the Māori workforce

The Māori population is younger than the rest of the population in Aotearoa, with 57% under the age of 30 years (Nana et al., 2021). Māori are increasingly employed in higher skilled jobs. However, workforce development requires significant investment and a concerted and multi-generational effort to attract and retain the right talent to the food and fibre sector.

Attracting and retaining talent

Developing capability across the value chain of the food and fibre sector requires investment in:

- Education and culturally appropriate training programmes that are supported by experienced and culturally safe trainers who can support the development of practical skills and knowledge. Where appropriate and feasible, multiple forms of delivery should be offered to cater to diverse needs (e.g., part-time courses, online options, flexibility). Moreover, engagement with local community, hapū, and iwi groups will help us understand what will work for the different rohe of Aotearoa.
- Adequate funding and financial support to enable Māori to participate in higher education and training programmes. These could include scholarships, paid apprenticeships with industry partners (earn while you learn), and cross-sector secondments. For example, to grow the professional Māori workforce in forestry, the industry should be introduced to high school students, so they can select the subjects that will make them eligible for university or polytechnic forestry courses. The industry provides several scholarships aimed at Māori, but students need adequate support to access these.

- Mentoring and support networks to provide guidance and support for students and early- and mid-career individuals. Networks can help connect young people with relevant industry, science, and technology professionals to support further professional and personal development.
- Promoting the benefits of working within the food and fibre sector by making it a desirable sector to work in. This should include decent wages, job security, and supporting professional development. This will help create more prosperous sectors, attract more talent, and improve the wellbeing of people in our regions.
- Ensuring our training and education institutions and workplaces are culturally safe spaces for Māori people to thrive.



Opportunities for Aotearoa enterprises in Singapore

Opportunities for adding value to Aotearoa's food sector

Both Singapore and Māori food businesses could benefit by working together to “grow more with less, sustainably”, through cross-sector innovation and collaboration. A collaborative network of SMEs from both countries should be established, and regular knowledge exchanges could be held. A series of workshops would provide a platform to explore our values, the ecosystem, and how we add value along the supply chain. Such exchanges would enable the identification of bi-lateral needs and how we could further develop capability and capacity between Singapore and Māori enterprises.

There is a real opportunity to leverage off the existing relationships and collaborative research projects among universities, institutes, and industry partners in both countries. The benefits of such regular knowledge exchanges could lead to the development of knowledge intensive industries in Aotearoa, led by Māori enterprises. These could bolster our regions, creating more high-paying and higher skilled jobs for our whanau, lifting overall wellbeing, while developing value-based export opportunities in Singapore.



Useful networks in Singapore that are relevant for Māori food exporters:

1. The Singapore Food Manufacturers' Association (SFMA) is a professional and trade association that primarily serves local food producers in Singapore (SFMA, 2023). They have a significant network that unites government and industry. SFMA can also support international food manufacturers that are wanting to enter Singapore.
2. The Singapore Food Agency is the leading governmental organisation for food-related matters in Singapore. It works with local and global industry for three goals: diversifying import sources, growing locally, and growing overseas. Internationally, Aotearoa has a reputation for high food safety and a network of government agencies located here (e.g., Ministry for Primary Industries) and in market (e.g., New Zealand Trade and Enterprise and Ministry of Foreign Affairs and Trade) that want to help businesses export to Singapore.
3. There are a number of joint research projects on alternative proteins between Aotearoa and Singapore (MBIE, 2020). Under the New Zealand -Singapore enhanced partnership, four projects are being jointly funded by both countries, based at AgResearch, Massey University, The University of Auckland, and Cawthron Institute. These programmes have established bidirectional relationships that Māori entrepreneurs can tap into.

Factors for successful food enterprise in Singapore:

1. **Compliance with Singapore regulations:**

Singapore has strict food safety regulations that must be considered in the R&D phase of product development. The products developed need to comply with the regulations of both Aotearoa and Singapore before exporting.

2. **Market research:** The food business should conduct market research to understand customers in Singapore and to identify the types of food products that are in demand there. This includes studying the local cuisine, culture, and consumer food trends.

3. **Building relationships:** The food business should focus on building strong relationships with potential customers and partners in Singapore. This could include attending trade shows and networking events, providing samples to potential customers, and being responsive to their needs (e.g., accounting for time differences and being available) and feedback.

4. **Partner with a distributor:** The food business should partner with a local distributor that has knowledge of the Singapore market and established connections with retailers and food service businesses. This will help the business navigate the local market and gain access to potential customers.

5. **Branding and marketing:** The food business should invest in branding and marketing to differentiate its products from competitors. This includes creating attractive packaging, building a brand identity, and promoting products through appropriate social media and other marketing channels.

6. **Pricing strategy:** The food business should develop a competitive pricing strategy that takes into account the costs of production, shipping, and import tariffs. The pricing should be attractive to potential customers while still allowing for a reasonable profit margin.

7. **Allow time:** Any product entry into Singapore realistically requires an 18-month runway to enter the market – and the capital/investment to support this process.

8. **Long-term business plan:** The food business needs to have a long-term vision, consider future trends and geopolitical context across the value chain, and plan accordingly to insulate the business from risk and future shocks.



Opportunities for adding value to Aotearoa's forestry sector

Forestry presents an opportunity for value-added, renewable bioproducts like plastics and resins. However, forestry waste, known as slash, is contributing to environmental degradation in Aotearoa, particularly on the East Coast of the North Island. Many of these forests are owned by Māori, who rely on the forests for income. Unless an innovative solution for slash management is found, new regulations may be implemented, which will lead to job losses in the region.

Meanwhile, Singapore faces a significant challenge with increasing plastic waste. It produced 822,200 tonnes of plastic in 2016, with only 7% recycled (Tan et al., 2021). There are some processes that can turn forest residues into biodegradable products as an alternative to plastic. Biorefineries that turn forest residues into biodegradable products also reduce greenhouse gas emissions and reduce reliance on non-renewable resources. Forest residues, a renewable waste product, could provide a valuable source of feedstock for biorefineries, but currently, the waste produced by New Zealand's forestry industry is not utilised due to the lack of market demand (Visser et al., 2019).

Biorefineries are an opportunity to create a circular bioeconomy, adding value to waste products while creating renewable and biodegradable materials (Talan et al., 2022). This could lead to higher-paying jobs, benefiting the many Māori currently employed in the forestry industry. Singapore could also benefit by creating biorefinery plants in New Zealand, producing sustainable packaging for the region.

This assumes that consumer demand for sustainable packaging exists in Singapore. Singapore has been making efforts towards promoting sustainable packaging in recent years.

In 2019, the Singapore government launched the Zero Waste Masterplan, which aims to reduce the amount of waste produced in Singapore and increase recycling rates (Singapore Ministry of the Environment and Water Resources, 2019). As part of this plan, the government introduced a packaging agreement programme for companies to reduce packaging waste and increase the use of sustainable packaging materials.

Additionally, businesses and consumers are increasingly making efforts to adopt more sustainable packaging practices. Some food and beverage outlets in Singapore have started using biodegradable packaging made from plant-based materials, such as cassava starch and sugarcane pulp, as an alternative to plastic. Overall, while there may still be room for improvement, there is evidence that sustainable packaging is becoming increasingly important to Singapore consumers.



Conclusion

Māori and Singapore cultures may seem very different, but they have a shared origin in the Pacific region. Some broadly shared social and cultural values also contribute to an alignment. A warm and long-standing diplomatic relationship between Aotearoa and Singapore, as well as congruent food regulations, make for a straightforward partnership. Existing bilateral relationships and a rich history of working together also create opportunities for the two countries to work collaboratively to address current and future fibre and food system challenges and bring mutual benefits to both countries.

There are latent opportunities for Māori food and fibre businesses in Singapore, including a growing interest in Singapore in sustainable foods and fibres. Māori can use their value of holistic prosperity to differentiate their food and fibre products, which may appeal to consumers in Singapore. Challenges in achieving this potential include protection of cultural knowledge and breaking into the complex and competitive Singapore market. Domestic support mechanisms and leveraging existing networks in Singapore will help businesses overcome these challenges.

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