

Ministry for Primary Industries  
Manatū Ahu Matua

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# The Future of Aotearoa New Zealand's Food Sector

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Exploring Global Demand Opportunities in the Year 2050

A Long-term Insights Briefing presented to the House of Representatives pursuant to section 8, schedule 6 of the Public Service Act 2020

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The future is bright for Aotearoa New Zealand. Our climate, natural resources and ability to produce quality food products competitively and sustainably position us well to meet demand from an increasingly diverse range of consumers.

But to capture these opportunities, we will need to continue to make good choices.

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# Foreword

## **Why are we interested in consumer demand for New Zealand's food exports?**

- Foreword
- Introduction
- Summary



# Foreword

## Tēnā koutou

I am pleased to present the Ministry for Primary Industries' (MPI's) first Long-term Insights Briefing: *The future of Aotearoa New Zealand's food sector: exploring global demand opportunities in the year 2050*.

This Briefing sets out longer-term options to build on *Fit for a Better World's* vision of accelerating our economic potential for a more productive, sustainable and inclusive economy. Te Puna Whakaaronui, the independent think tank supporting this government and sector roadmap, noted three key global drivers of change in our food export economy: climate change, technology and consumer preferences.<sup>3</sup>

Consumer demand, particularly relating to exports, is the perspective MPI has chosen to focus on in this Briefing. Not only can this provide options to grow the value of our exports and support New Zealand's overall economic wellbeing, but delivering on this can elevate our food system's productivity and resilience. Developing new opportunities and aligning New Zealand's primary production with future consumer demand will require improved domestic capabilities, infrastructure and utilisation of a broader range of technologies.

We have seen the impact recent events such as Cyclone Gabrielle, sector-specific disease outbreaks and the COVID-19 pandemic can have on the food system. Building resilience underpins our ability to build people's prosperity especially in regional New Zealand, reliably meet consumer demand and see success in the food sector.

We can diversify and build our resilience in several ways out to 2050, including in what we seek to build a reputation on, what we export and which markets we export to. This Briefing explores each of these in further detail and provides some options for consideration.

I would like to thank all those who contributed their time and effort to this work. The interviews and public consultation submissions provided a rich base for developing this Briefing and I look forward to our continued engagement. Preparing well now will allow us to have greater confidence in our future, and I am excited to progress those options that government can contribute to in order to achieve the vision of a thriving 2050 New Zealand food sector.

Ngā mihi nui

Ray Smith  
Director-General MPI

# Introduction

## The future of food from the global end-consumer's perspective

Food is the foundation of Aotearoa New Zealand's export economy – totalling \$45.2 billion June year end 2022.<sup>1</sup> It currently represents 67.1 percent of the \$67.3 billion total export goods.<sup>2</sup>

Why are we thinking about end-consumer demand for food 30 years from now? We need to continually plan ahead to capture additional opportunities in order to protect ourselves from future shocks and to improve our productivity, economy, environment and society as we transition to the world of 2050.

Looking at global end-consumer demand is one lens we can use to assess future possibilities. In the short term, understanding end-consumer needs will help differentiate us to our current customers. In the long term, it opens the door to more direct-to-consumer possibilities and a more diverse array of offerings. We also need to know if future changes in consumer trends could impact demand for New Zealand food.

Other food-producing countries are not likely to remain static as they face more frequent health and climate events and geopolitical shocks. They will look to adapt and develop markets to build in better resilience, develop alternative products and diversify to new products and services. Keeping one step ahead by building our own resilience and a more diverse portfolio of options will be key.

This Long-term Insights Briefing explores how demographic change and global trends are influencing future global consumer preferences out to 2050. We look at this using three lenses:

- What are future consumer core needs (the non-negotiables) likely to be?
- How might consumer preferences change?
- Where are our future consumers likely to come from?

The answers to these questions present a wide range of opportunities for New Zealand. We explore what this might mean for New Zealand going forward and what we might need to do to capture the opportunities.

## What is a Long-term Insights Briefing?

Long-term Insights Briefings help New Zealanders collectively think about and plan for the future. They explore long-term issues facing people in Aotearoa New Zealand. Briefings are a new requirement for agencies under the Public Sector Act 2020.

The Briefings are independent of ministers and are not government policy. The suggestions and insights included in this Briefing are written to spark thinking, and ultimately action, by people across political spectrums, business and communities to ensure that New Zealand is prepared for change ahead.

Annex one has more information on the process we followed to select the subject of this Briefing and develop the insights in it.



# Summary: consumer demand to 2050

## Consumers in current export food markets

New Zealand is a highly efficient exporter of primary food products. We mostly produce sought-after commodity products, e.g. dairy, meat and fruit, which are sold to other companies, but we also produce a complement of consumer-focused products.

Demand for New Zealand's existing product mix will likely increase amidst growing global commodity demand arising from population and wealth growth and climate disruptions to worldwide food-growing systems.

While we are likely to have more regular and severe disruption from climate change and other shocks, our production resilience is relatively better than other food-producing countries. This puts us in a good position as we plan for the future, but we will need to build resilience and plan for change.

## The global consumers of 2050...

### ...will have expanding core needs

Traditionally, core needs have centred on personal safety and satisfaction. In recent years, external concerns such as sustainability have become core. By 2050, animal and human welfare as well as food sovereignty may also become core needs.

New Zealand has built a reputation as a safe and trusted provider of quality food that is the foundation of its trade. By 2050, this may not be enough on its own to differentiate ourselves with consumers.

**Our future reputation:** New Zealand's current value proposition will need to keep pace with changing consumer needs.

We could look at how we can advance our brand to sustainability-plus, develop improved mechanisms to build trust with end-consumers and be proactive about planning for shocks to our reputation.

### ...will have more diverse preferences

Global trends indicate more demand for localised production, connecting food and health, technological change, concern about safety and security, environmental disruption, shifts in economic power and change in consumer-supplier relationships.

Six possible consumer demand pathways are *Locavores*, *Direct to me*, *Experience seekers*, *Back to nature*, *Evolvers* and *Individualists*. These already exist but are likely to accelerate driven by global trends, technology and emerging consumer needs and aspirations.

**Our future exports:** Diversification from our current export mix.

There are many options that are not mutually exclusive. We could pursue both new innovative exports and our traditional exports. Alternative proteins and animal proteins are both natural and genetically modified food. We will need new information and capabilities to encourage development of innovative products and services for future consumers.

### ...will increasingly live in Asia or Africa

While New Zealand's existing markets will remain wealthy, Asia and Africa will see major growth in population, economic activity and individual wealth.

Consumers in the growing markets of 2050 may possibly be more aligned with the six demand pathways than consumers in New Zealand's traditional markets.

**Our future markets:** The balance between our traditional markets and potential growth markets (especially Asia) may need to change in the future.

We will need better understanding of these emerging markets, and we will also need to put more effort into building our reputation with them.

## Issues and challenges with consumer-driven opportunities

### Contributors shared the challenges for exporters in meeting future food consumer demands

- Limited knowledge of consumers and markets.
- Weak links with other sectors like health, education, tourism and education.
- Market access for small and medium enterprises.
- Difficulties navigating the export system.
- Issues with the regulatory system, particularly around IP protection and GM.
- Support for commercialisation of technology.
- Access to capital and cost of change.
- Access to new imported genetic material.
- Energy and infrastructure.
- Skill development and access to talent.
- Potential long-term supply-chain issues.

### We also heard wider, cross-cutting issues that may affect our ability to capture opportunities

#### DOMESTIC CONSUMERS

We heard from many contributors that coherence in strategy between domestic food equity and choice and our trade export system may be needed. A sustained cross-government and industry effort would be required.

#### FOOD SYSTEM RESILIENCE

With recent severe weather events, contributors noted that efforts to improve food system resilience will increase our own domestic food equity and choice as well as our ability to meet future export consumer demands.

#### CHANGING LAND USE

A number of contributors told us that a mosaic of different land and ocean uses will be needed if we decide to diversify to meet changing consumer demands and improve climate resilience.



## Options to capture consumer-driven opportunities

We've identified 10 things we could do to capture potential future consumer demand.

### Expand reputation



Build New Zealand's long-term value proposition.



Build consumer trust.



Manage reputational shocks.

### Diversify exports



Support development of weightless exports.



Focus on origin stories.



Develop value-add and premium.



Build direct-to consumer capability.

### Build markets



Develop cultural competencies and relationships in growth markets.



Build recognition of our value proposition.

### Join up thinking



Convene and facilitate collaboration across food, health, education, tourism and innovation sectors. Connect wider issues around domestic food, food system resilience and land and ocean use.



# Context

## **What is influencing consumer demand for food?**

- Our export mix
- Who are the consumers of 2050?
- Changing consumer preferences
- Current industry perspectives



## A complex range of factors will influence consumer demand for food by 2050

Consumer demand for food has driven food production for centuries. Early demand was constrained by available local supply and major events that affected access to food like famines and new discoveries. This changed after the industrial revolution when long-distance trade removed a lot of the potential for food shocks and enabled consumers to experience more consistency and variety. In Aotearoa New Zealand, Māori traders were some of the first to tap into the resulting acceleration in consumer demand. By the mid-1900s, consumerism fuelled global trade, supported by increased safety, biosecurity and quality systems and free trade agreements.

Today, Aotearoa New Zealand has made its mark as a safe and reliable food exporter, initially through strong relationships with our traditional markets and more recently with China and other Asian markets.

The future success of our food sector will depend on a good understanding of how end-consumer preferences are likely to change. In this section, we look forward to the factors that might be influencing end-consumers by 2050. We look at the direction of New Zealand's current markets, key worldwide demographic changes, the major global trends influencing consumer preferences and what food sector leaders think is likely to drive future consumer demand.

This information will help us to identify whether and where to expect changes to consumer preferences and what this might mean for our future food exports.

### OUR EXPORT MIX

How are we positioning ourselves now and what changes might we see by 2050?

#### WHO ARE THE CONSUMERS OF 2050?

A brief scan of the major demographic shifts that might influence end-consumer demand.

#### CHANGING CONSUMER PREFERENCES

The global trends that are most likely to affect end-consumer preferences in the longer term.

#### CURRENT INDUSTRY PERSPECTIVES

We talked to business leaders to find out what they think is influencing end-consumer demand.

# Our food export mix

Most of our primary sector exports are sold to major customers (companies who produce value-added consumer-facing products) rather than to consumers via New Zealand-owned brands. There is far more demand than we can satisfy.

**Dairy** is New Zealand's largest export. Since cheese was exported in 1846, the sector has grown to a world-leading processor of sophisticated powders and processed dairy products. Global dairy demand is forecast to remain strong.

**Horticulture** crops remain on a growth pathway with a more diverse set of export markets than other food exports. They are mostly exported as primary products such as apples and pears, kiwifruit, wine and vegetables.

**Processed and other products** consist of a diverse range of goods, including honey and innovative processed foods.

**Meat** products such as sheep, beef and venison are mostly exported as bulk commodity goods to consumer-facing companies such as fast-food restaurants. Pork, poultry and other meats serve mainly domestic demand. Demand is expected to remain firm.

**Seafood** is exported as bulk commodities and consumer-facing products. Most seafood is harvested in the wild, (e.g. hoki, tuna, snapper), but salmon, mussels, and oysters are farmed but in smaller quantities. Demand remains stable.

Product	Export revenue (NZ\$ million)	% of total
Dairy	21,998	49%
Meat	11,475	25%
Horticulture	6,782	15%
Seafood	1,919	4%
Arable	252	1%
Processed food and other products	2,753	6%
Total	45,179	100%

## Top 10 food export destinations<sup>1</sup>

Year to 30 June 2022, NZ\$ million



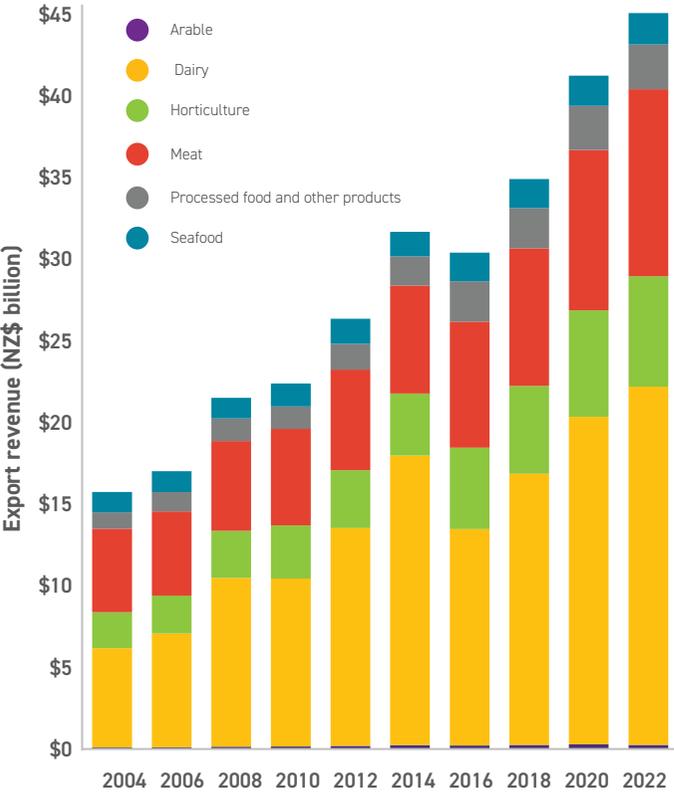
**Māori food exports** make a significant contribution to the economy. Thirty-two percent of all Māori businesses operate in the food and fibre sector and are particularly focused on the seafood, meat and forestry sectors. Although most Māori food businesses are small, 38 percent are medium or large. Combined agriculture, forestry and fishery assets have increased 108 percent since 2018.

The sector accounted for 1.4 percent of New Zealand's food exports (\$750 million) in 2021.<sup>4</sup>

# Our food export mix

Demand for our existing food export products is likely to increase with growing worldwide demand for food.

## Primary food exports 2004-2022<sup>1</sup>



Demand for our existing product mix is increasing, particularly for dairy and meat.

## Our ongoing comparative advantage

Our existing markets are in a good position. New Zealand food producers have become extremely efficient, garnering a reputation as a safe, quality food provider. Work is under way to reinforce our claims of being a natural and sustainable producer.

We have seen many tests of our resilience in recent years in the COVID-19 pandemic and its aftermath, including supply chain issues, followed closely by the impacts of Cyclone Gabrielle.

The sector has seen record revenues during COVID-19 recovery. Nevertheless, some in the sector think global supply chain disruption could start to become the norm, potentially affecting exports in the long term.

Looking out to 2050, a study by the Agribusiness and Economics Research Unit (AERU) indicated that, while there may be more regular and more impactful and distressing shocks to different parts of the food sector and different regions, more frequent climate events are unlikely to cause major overall impact on our food export revenues.

This is because with more frequent and widespread events worldwide, New Zealand food export revenues are likely to increase overall relative to other countries as revenues benefit from higher prices resulting from global reduction in supply.

*“The world is going to be short of low-cost sustainably produced food from trusted food producers like New Zealand.”*

- Workshop attendee

*“Strategies that seek to understand how New Zealand can maintain and grow the value of selling to customers are important.”*

- Large exporter

*“There will always be room for business to business due to not having to have a consumer-facing brand, which is very expensive.”*

- Industry body

# Who are the consumers of 2050?

Major shifts around ageing, urbanisation, wealth and distribution of the population means that consumer preferences will change, providing new market opportunities.

## More, more, more

Consumers will need 56 percent more food by 2050.<sup>6</sup> They are living longer, more are better educated and the shift to living in cities will continue. However, the equity gap between rich and poor persists with continuing rising wealth inequity and political unrest for more than 70 percent of the world's population.<sup>7</sup>

**8 billion** people now

**9.7 billion** by 2050.<sup>6</sup>

Between 2015 and 2050, the proportion of the world's population over **60** years old will nearly double from **12% to 22%.**<sup>8</sup>

The Philippines, India, Egypt and Pakistan remain young into 2050.<sup>9</sup>

**68%** urban by 2050 with 66 mega cities.<sup>10</sup>  
Most rapid in Asia and Africa.

Cross-country inequities in education are closing.<sup>11</sup>

**Expect:** Increasing demand for food, especially for health-based food products for an ageing population, and demand for alternative options to meat and dairy as production reaches limits.

## Swing to Asia and Africa

The significant demographic shift to Asia and Africa will continue, with rising population and incomes, as population rates in the west slow. Almost 3 billion, or more than 40 percent of today's population, will join the middle classes by 2050. These entrants will be almost exclusively from today's emerging markets.<sup>12</sup>

**More than half** of projected population growth to 2050 in **eight** countries in **Asia** and **Africa.**<sup>6</sup>

India's population to overtake China in 2023.<sup>6</sup>

The west stays wealthy but population growth rates slow with less than **2** percent consumption growth.<sup>14</sup>

The east is growing. China, India, the Philippines and Malaysia annual growth in real incomes is more than **4** percent.<sup>14</sup>

European down from **70% to 64%.**

**6 million** people in New Zealand by 2050.<sup>13</sup>

- 26% Asian
- 20% Māori
- 10% Pacific

**Expect:** Significantly increased demand from Asia and Africa, demand for increased diversity in food options and higher expenditure per capita from these countries.

## Today's youth are tomorrow's target

The youth of today will be 2050s largest consumer group. This includes the generation born in the next few years. Their consumer needs and wants will be underlined by a significant wealth transfer from older generations. In the United States alone, this equates to US\$72 trillion by 2045.<sup>16</sup>

Environmental sustainability is seen as the greatest issue for young people, but this does not yet factor significantly in today's young consumer food purchasing decisions.<sup>15</sup>

The working-age population will decrease **10** percent worldwide by 2060 – but this will be uneven worldwide.<sup>17</sup>

**600** million millennials in Asian "growth" countries are increasingly wealthy, digitally savvy and focused on sustainability.

Today's young people are primarily indulgence led.<sup>15</sup> They value food as medicine for physical and mental health and are more willing to accept and adopt new technologies.

**Expect:** Increasing demand for sustainable and ethical food that addresses physical and mental health as well as ongoing demand for value, quality and taste.

# Changing consumer preferences

The global drivers below are likely to influence end-consumer food choices by 2050.

## Preference for localised production

**Increasing trade barriers:** Pressure on free trade due to sustainability, localisation of food supply and food safety.

**Governments focus on domestic resilience:** Building domestic production, stockpiling, banning exports or increasing technical market access requirements in response to acute shocks and fragile supply chains.

**Rise of food sovereignty:** Growth in demand for rights of people to produce their own food follows concerns about the centralisation of the food system.



**Expect: Increasing demand for locally produced food.**



## Shifting consumer-supplier relationships

**Direct to consumer:** Subscription/gifting models, influencer driven.

**AI/internet of things:** Bots (artificial intelligence) do the buying.

**Shift to private power:** 20 companies now process most of the world's food.<sup>19</sup>

**Dissolving borders:** Technologies enable decentralisation and cross-border societies. Power defined by control of flows of people, goods, money and data.<sup>20</sup>



**Expect: More demand for direct-to-consumer services.**



## Technology disruption

**Growth in demand for alternative foods:** Plant-based and other alternative proteins, insect agriculture, algal products. This is likely to accelerate with increasing demand for non animal-based proteins.

**Wider technologies:** Artificial intelligence (AI), internet of things, big data, virtual reality (VR), digitisation, blockchain, and smart/remote farming.

**Biotechnology accelerates:** Cellular agriculture, genomics, genetic modification, microbiome research, synthetic biology and alternative proteins – and is increasingly accepted.<sup>21</sup>



**Expect: Increasing acceptance of new technologies.**



## Shifts in economic power

**Emerging markets:** Emerging market consumption could be two-thirds of global consumption in 2050 compared to around one-third today.<sup>10</sup>

**Surge in electoral autocracies:** The share of global output coming from economies classed as “mostly unfree” (economies with a high degree of state ownership and control) is set to rise from 12 percent to 43 percent, based on Bloomberg Economics’ gross domestic product (GDP) forecasts and the United States (US) Heritage Foundation’s classification system.<sup>22</sup>



**Expect: Increased demand from non-traditional markets with more state-based influence.**



## Concern about food safety and biosecurity

**Antimicrobial resistance** increasing.<sup>26</sup>

**Exposure to new human and animal diseases:** Risks grow with increased mobility of people and goods, climate change and crossover between species. Implications for biodiversity.<sup>27</sup>

**Illegal acts:** Food fraud, contamination and sabotage may become a significant challenge.



Expect: Growing demand for assurance.



## Overlaps between food and health

**Ageing populations:** More people begin focusing on ways to improve overall health as they age.

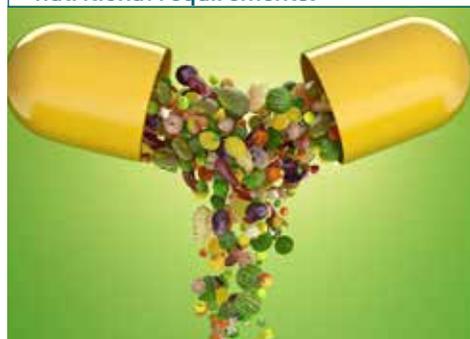
**Obesity issues impacting human health worldwide**

**Precision technologies develop:** These enable individually targeted nutrition.

**Shift in health systems:** Moves from treating disease to prevention.



Expect: Increasing interest in individualised solutions to health and nutritional requirements.



## Environmental disruption

**Environmental impact of food production:** Impact per unit of production increases from 50 percent in 2010 to 90 percent in 2050.<sup>23</sup>

**Climate impacts on food production:** About 80 percent of the global population most at risk from crop failures are in sub-Saharan Africa, South Asia and Southeast Asia.<sup>24</sup>

**Global food waste grows:** More than one-third of global food production (1.3 billion tonnes) is wasted annually. Global waste is likely to grow by 70 percent by 2050.<sup>18</sup>

Rise of **regenerative agriculture practices.**

**“Flexitarianism”:** Meat intake reduces, replaced by alternative proteins.

Rise of the **circular, green economy.**<sup>25</sup>

**Energy demand acceleration,** particularly demand for electricity.



Expect: The rise of conscious consumerism.



# Industry perspectives

We met with 33 food and fibre industry and innovation system leaders seeking their perspectives on future consumer demand. They are already identifying shifts in consumer demand and are generally seeing the trends playing out in the following ways:

## CORE CONSUMER NEEDS – consumer behaviours that do not seem to have changed and are ongoing.

<b>Quality, taste</b>	These core elements are likely to stay as key drivers of consumer demand.
<b>Affordability</b>	A significant trade-off for many consumers when deciding which product to buy.
<b>Convenience</b>	Food that is in appropriate formats and is suitable for consumers' individual lifestyles.
<b>Trustworthiness</b>	There is an expectation that industry will need to work on mechanisms to increase consumer trust in its products – sustainability, ethics, quality, origin and safety. This is also seen as a likely cost of entry.
<b>Sustainability</b>	Environmental impacts of food production are not well understood by consumers. Only a niche group is willing to pay a premium for sustainability claims. Many sector leaders see this as a cost of entry, not a point of difference.

## CHANGING CONSUMER PREFERENCES – changes in consumer preferences that industry is noticing.

<b>Ethical production</b>	While some consumers will pay a premium for more ethically friendly production, it is currently a niche segment that is expected to grow. This includes factors like labour practices and animal welfare.
<b>Localisation</b>	A noticeable trend towards buying products grown or produced locally. The three drivers of this are supply chain/food security post-COVID, perceived lower emissions footprint and local producers lifting their performance.
<b>Growing focus on health and nutrition</b>	Food as a medicine, especially with an ageing population, is becoming a significant area of development.
<b>Demand for plant-based protein</b>	Some consumers are switching to plant-based proteins or reducing their animal-based protein intake to become “flexitarian”. However, industry leaders still think that global animal protein demand will continue to grow.
<b>More than just nutrition</b>	Consumers are seeking out experiences with their food that are tailored to specific occasions and individual lifestyles.





Our existing export food markets are in a very good position. While we will need to maintain and build our own resilience, New Zealand should benefit from growing demand and higher prices that may arise from climate disruption and an increasing world population.

But global trends and major demographic shifts are likely to shift core consumer needs and create greater diversity in individual consumer preferences by 2050.

In the next section, we explore how these drivers and trends might influence consumer demand and what this might mean for our future food exports.

# Consumer Demand

## What will consumers want by 2050?

- Core consumer needs
- Consumer demand pathways
- Shifting markets



# What will consumers want by 2050?

In this section, we delve into what consumer demand might look like in 2050, based on the trends we highlighted in section 2.

## EXPANDING CORE NEEDS

Sector leaders told us that they think the core consumer demands of today will remain fundamental drivers, but they are increasingly seeing sustainability and wider ethical concerns as costs of entry. We examine these ideas further.

Probable

## MORE DIVERSE PREFERENCES

Based on the global trends and our discussions with sector leaders, we identified six possible future consumer demand pathways. We delve into the opportunities that these might present going forward.

Possible

## SHIFT TO ASIA AND AFRICA

Our demographic analysis shows that there will be a significant demographic and economic shift to Asia and Africa by 2050. We explore what this might mean for future consumer demand.

Possible

## CORE CONSUMER NEEDS

Fundamental preferences. We look at food security, food safety, taste, price, quality, convenience, sustainability, ethics and food sovereignty.

## SIX DEMAND PATHWAYS

Six possible future scenarios for individual consumer demand: *Locavores*, *Direct to me*, *Experience seekers*, *Back to nature*, *Evolvers* and *Individualists*. These are driven by localisation, changing consumer-supplier relationships, more than nutrition, environmental disruption, technology change and food and health.

## SHIFTING MARKETS

Where our future consumers may come from. A brief discussion on the changing markets of 2050 and which markets are most aligned to our consumer demand pathways.

# Core consumer needs

Core consumer needs are non-negotiable “tickets to the game”.

If these are not served, consumers are unlikely to be receptive to our products, much less likely to pay a premium, and we risk higher barriers to entry for our food.

In this section, we explore how these fundamental consumer needs may change over time and what this could mean for our future export markets.



# Core consumer needs: tickets to the game

The core needs of today's consumers are still likely to be relevant in 2050.

The fundamental needs of consumers with a reasonable level of disposable income are unlikely to change. These are food safety, affordability, taste, price, quality and convenience.

New Zealand currently trades on its excellent reputation in these areas, particularly around food safety, taste and quality. An understanding of the changes in these core needs will help us keep ahead of our competitors.

For consumers with low incomes, food security and affordability are likely to remain a core need, despite efforts to address these issues.

*Food affordability and availability will be a key issue in 2050.*

– Workshop attendee

Food security	Food safety	Taste
<ul style="list-style-type: none"> <li>• The world will need 56 percent more food by 2050.<sup>28</sup></li> <li>• Currently, 3.1 billion people cannot afford the least-cost form of a healthy diet. The majority live in South Asia (1.3 billion), sub-Saharan Africa (894 million) and Southeast Asia (347 million).<sup>29</sup></li> <li>• Rising wealth inequality for over 70 percent of people and 840 million food insecure in 2050.<sup>30</sup></li> <li>• By 2050, 216 million people may need to move within their own countries due to climate change.<sup>31</sup></li> <li>• Natural disasters, disease and pathogen issues could worsen hunger reduction outcomes.</li> <li>• Food security may influence future decisions about what sector of the consumer market should be targeted, e.g. high value versus commodity.</li> </ul>	<ul style="list-style-type: none"> <li>• Currently, 10 percent of people worldwide fall ill from contaminated food each year.<sup>33</sup></li> <li>• Food safety will be seen as a holistic issue – including climate change, ethics and security.</li> <li>• Gene technologies have not been shown to introduce any new or altered hazards into the food supply to date.<sup>34</sup></li> <li>• Food fraud is becoming an increasing concern for consumers. Major food safety incidents are likely to occur that affect national reputations.</li> <li>• New food safety perceptions may emerge from shifts in food sources and production, technology and climate change.</li> <li>• Increasing concern about contamination with increasing sensitivity in measurement.</li> </ul>	<ul style="list-style-type: none"> <li>• A key consideration for most people is the sensory perception of food, which includes taste, smell, texture and appearance.<sup>38</sup></li> <li>• The sensory profile for foods and drinks is expected to continually improve and evolve. For instance, the use of flavour sensors and artificial intelligence will help to develop tastier and more customised products.<sup>39</sup></li> <li>• By 2050, taste will remain a key driver as consumers revisit flavours of the past but also try new tastes.</li> <li>• More diverse cultural preferences, e.g. halal, may drive consumer tastes.</li> </ul>
Price	Quality	Convenience
<ul style="list-style-type: none"> <li>• Price elasticity of high-income consumers is much lower than for low-income consumers – i.e. the cost of food is not as much of a factor for higher-income consumers.<sup>32</sup></li> <li>• This may mean that affordability as a barrier may decrease for many consumers. The increase in disposable income in some emerging economies will result in an increase in food consumption but also a composition change, with greater demand for important nutrients such as protein.</li> <li>• However, food affordability is still likely to be a driver for lower-income consumers worldwide with a significant proportion of people still expected to be affected by food security issues, particularly in areas where there is conflict, climate extremes or inequality.</li> </ul>	<ul style="list-style-type: none"> <li>• The top five factors that influence consumers' perception of food quality (in order of importance) are appearance (includes shape, size and colour), price, ingredients, origin (country) and taste.<sup>35</sup></li> <li>• Consumers are adding health and nutrition to their idea of quality. In the US, 84 percent of consumers report considering health when purchasing fresh food.<sup>36</sup></li> <li>• Food quality is likely to continue to improve for consumers due to advancements in supply-chain technology. Packhouse to consumer timeframes are expected to decrease dramatically.</li> <li>• The potential effects on food quality from climate change are increasingly being addressed by technological advancements.<sup>37</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Convenience often trumps nutrition, with people choosing time and effort-saving convenience foods such as pre-packaged snacks, fast food, frozen meals and take-aways. This is particularly prevalent in the West but also growing in markets such as Asia where "lazy meal" sales are on the rise.<sup>40</sup></li> <li>• Convenience has been a major element in consumer decisions especially since COVID-19 – however, it is moving from speed to empowerment of consumers to easily create meals.<sup>41</sup></li> <li>• There is a perception that ready meals are lacking in terms of taste, quality and nutrition. New cooking devices, powered by AI or using 3D printing technology and meal kits have the potential to close the gap and deliver a high-quality, convenient eating experience.</li> </ul>

Traditionally, core consumer needs have focused on personal safety and satisfaction. In recent years, external factors such as sustainability are becoming core consumer needs.

Our discussions with business leaders indicate that many now consider sustainability to be a cost of entry. Products manufactured 'sustainably' seldom attract a premium unless combined with other desirable attributes.

Research indicates that, while consumers are highly concerned about sustainability, this has not translated to consumer food purchasing decisions at the supermarket shelf. Instead, consumers expect that the driving force for incorporating sustainable practices into food production will come from retailers and governments.<sup>23</sup>

By 2050, we expect ethically produced food to be added to the list of core consumer demands. This means that considerations around animal and human welfare in food production may feature alongside environmental concerns by most consumers who can afford to make choices.

Business leaders say that they are already seeing this emerge in our current markets. Regulators in these export countries are imposing requirements that they consider reflect their consumer needs. While there may be a lag in emerging markets, we assume that, by 2050, these expanded needs could also be included as core.

There is also a possibility that, as challenges relating to access to food increase with growing climate impacts, geopolitical events and concerns about corporate control of food, food sovereignty (rights of people to local control of and access to their own food) may also be included in ethical food purchasing choices by consumers. In particular, future potential consumers may expect exporting countries to have tackled issues of food security and sovereignty domestically, and are making positive contributions to wider international food security challenges.

Sustainability	Ethics	Food sovereignty
<ul style="list-style-type: none"> <li>Investors, boards, customers and governments are increasingly demanding environmental sustainability as part of a licence to operate.<sup>42, 43</sup></li> <li>80 percent of consumers are concerned about sustainability, but only 1-7 percent currently pay a premium for it.<sup>44</sup></li> <li>The EU and US are proposing tariffs around foreign goods not subject to carbon pricing in exporting countries.<sup>45</sup></li> <li>Move to scope 3 emissions – emissions from activities that the organisation indirectly affects in its value chain.<sup>42, 46</sup></li> <li>Increasing emphasis on broader issues such as water use and waste and oceans management.<sup>42, 47</sup></li> <li>Possible need to balance emissions reductions with increasing demand for food. Some consumers and markets may not be able to afford sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>While most consumers do not currently consider ethical matters when choosing food, this is likely to change, 46 percent of Gen Z and Millennials in senior roles in business have rejected an assignment based on their personal ethics.<sup>48</sup></li> <li>Demand for ethical food production is likely to grow, including working conditions and wages, cultural practices and animal welfare.</li> <li>95 percent of people surveyed by MPI agree that it is important that the welfare of farmed animals is protected.<sup>49</sup></li> <li>There is likely to be special focus on animal protein production.</li> <li>An increase in quality alternatives to animal proteins, e.g. plant-based meat and technologically driven alternatives, is likely to provide more choices – with one scenario a movement away from animal proteins.</li> </ul>	<ul style="list-style-type: none"> <li>Food sovereignty is a movement that supports the rights of communities to access their own food.</li> <li>Greater awareness of food sovereignty issues as indigenous populations rise and transparency around food sources increases.<sup>50</sup></li> <li>Rising concern about corporate control of seed, food production and distribution.</li> <li>Uptake of international architecture around indigenous rights, e.g. Indigenous Peoples Economic and Trade Cooperation Arrangement and the United Nations Declaration on the Rights of Indigenous Peoples. New Zealand's FTA with the EU includes a <i>Māori Trade and Economic Cooperation</i> chapter on cooperation opportunities to advance Māori economic aspirations.</li> </ul>

*Consumers' sustainability expectations will broaden in the years ahead, with issues such as water use and ethical production likely to receive increasing attention.*

– Individual business

*Internationally, there is a growing acceptance of the importance of the links between animal, environmental and human wellbeing.*

– Social organisation

*If we can't feed ourselves, we can't tell the world that we are legitimate, sustainable, ethical producers.*

– Social organisation

# Core consumer needs: opportunities

We need to maintain our reputation as a safe and reliable food provider and keep up with growing consumer demands for sustainable, ethical production and more.

## Our future reputation

New Zealand's current value proposition will need to keep pace with changing consumer needs.

Contributors generally agreed that, in the future, we may need to build on our current natural advantage to a proposition that resonates more widely with future consumers.

This shift would need to be at a pace that allows us to stay one step ahead of our competitors but still minimise increasing costs of entry that could have flow-on implications for food affordability, food security and the economy.



## Advance New Zealand's brand to "sustainability-plus"

Some contributors suggested that a coordinated master brand could provide a useful foundation for exporters to trade on, but others pointed out that there is "potential to dilute individual stories if we try and apply a single message to all products". Either way, many noted that we don't know enough about what future consumers are likely respond to.



## Build trust with end-consumers

While our current regulatory system addresses many aspects of trust, many contributors discussed the need to transition from a brand promise to a brand proof. More tech-enabled traceability systems are needed in partnership with industry that allow end-consumers to directly verify claims at all points of the value chain. This will allow exporters to better meet core needs of safety, quality, and sustainability as well as future core needs around ethical production, food sovereignty and connections with the origin stories of food.



## Manage shocks to our reputation

Shocks that could impact our ability to provide for core consumer needs include geopolitical, climate, disasters and biosecurity events, safety and security and regulatory issues. Shocks in one part of the sector can impact the whole sector. Contributors were in agreement that planning early to respond to risks to our reputation is needed to maintain future resilience. This includes both urgent planning to reduce risks of shocks and understanding and planning for end-consumer reactions.

*Social licence will be more important going forward.*  
– Individual business

*How do consumers actually perceive us and what do we want them to perceive? Do we know enough about this?*  
– Public workshop attendee

*New Zealand now needs to shore-up and add to the positive associations we enjoy with verified and verifiable proof points.*  
– Individual business

*It is sensible that government plays a significant role in planning New Zealand's response to significant shocks to our reputation.*  
– Individual business

# Consumer demand pathways

How might individual consumer preferences change by 2050 and what might this mean for our future export markets?

This section explores six possible consumer demand pathways. These are consumer-driven market segments that could emerge by 2050 or earlier. We delve into each one to find out what future opportunities might exist for Aotearoa New Zealand by 2050.

The pathways reflect a wide range of changing consumer preferences and are not mutually exclusive. They overlap with each other and other sectors like health or tourism. Some raise questions that we may need to think about at a national level. Others pose possible challenges to New Zealand's existing exports but could also lead us to new opportunities.



# Consumer demand pathways

## Introducing the possible future consumers of 2050. Here are their stories.

Our target demographic was the high-growth middle class consumers who are financially able to pursue individual preferences.

These stories represent six consumer demand profiles that we selected from a long-list of scenarios generated in internal workshops. They describe the pathways that are most likely to occur because they:

- were each driven by more than one of the major global trends we described in section 1;
- reflect demographic changes particularly around ageing, urbanisation and behaviours we are seeing in rangatahi – the consumers of tomorrow;
- are emerging consumer behaviours being seen by sector leaders;
- reflect the shifts in core consumer needs that are likely to occur by 2050.

Other “darker” scenarios may exist where global drivers like geopolitical unrest, fragmentation of the global market system or massive climate disruption drive consumers to be focused primarily on more existential concerns like food security and equity. We have not included those here, although our pathways do incorporate these major uncertainties as drivers.

### THE LOCAVORE

**Prefers products produced locally.**

Aarin lives in a large city. She buys a lot of her food harvested from the local food towers installed after the food crisis of 2043 caused widespread issues accessing food for the population. The towers were installed by the Government using low-emissions technologies from Aotearoa. She now prefers to buy most of what she eats from local suppliers – including some alternative foods manufactured in the city, replacing staples that would normally have come from other countries.



### DIRECT TO ME

**Sources food directly.**

A few years ago, Indra starting using the New Zealand open-source food platform taking the world by storm that allows people to safely source food directly from producers anywhere in the world. The company has really shaken up the worldwide food supply system. She is planning to buy one of the new home kitchen food printers so she can print most of her basic staples using the quality New Zealand protein bases.



### THE EXPERIENCE SEEKER

**Not just food, but experience.**

When not travelling the world trying out all the different cuisines, Fenhua is in the virtual reality world at home trying out their next cultural food experience with the friends they have made from their adventures. These days, it is much more fun with some of the new sensory add-ons. They can't wait for their next VR visit – to Aotearoa New Zealand. They have heard great things about the extreme food experiences there.



### BACK TO NATURE

**Sustainability and ethical choices are non-negotiable.**

Ever since they were young, Lucia has been careful that what they eat is sustainably and ethically produced. Nowadays, it is much easier because the new tracing apps allow them to instantly see where their food has come from and its ethics score. Lately, they have been buying from the Aotearoa companies with the full traceability systems so they know that the food comes from indigenous or local farmers.



### THE EVOLVER

**Open to novel foods including GM and alternative proteins.**

Larissa loves eating fresh food and has been purchasing gene edited fruit and vegetables from her local supermarket. After climate events and pest outbreaks led to a large amount of food waste and a higher grocery bill, she sees this as a more sustainable and affordable option. She enjoys experimenting with a range of other novel foods, including the new alternative proteins and indigenous food from Aotearoa.



### THE INDIVIDUALIST

**Seeks food tailored to their microbiome, DNA and goals.**

Lingun's grandmother always taught him the importance of balance in diet as the key to good health. Now that he is getting older, he has installed the latest New Zealand-developed AI system into his home that analyses his gut biome and waste, designs recipes and purchases the food he needs week by week. The technology is making a real difference to his health – his diabetes is no longer an issue.





# LOCAVORES

Popularised in 2005, the *Locavore* movement encourages the consumption of products produced locally. Locavores in 2050 will prioritise locally produced products bought directly from suppliers within the local community. While the concept of self-sufficiency and subsistence agriculture has been the dominant form of production in the world until the 20th century, the evolution of this trend will likely be empowered by new technology and products that enable local food production at scale and acceptable cost.

**65%**  
of consumers in 36 countries try to buy local where possible.<sup>51</sup>

**59%**  
of consumers believe that the farther food travels, the worse it is for the environment.<sup>52</sup>

## Driven by:

**Consumer demand for transparency:** Increasing interest in food origins and food chain transparency to support ethical consumption.

**Increased urbanisation:** The significant urbanisation and growth of the middle classes may put pressure on supply systems to feed growing cities. Supply chain disruptions, compounded by the COVID-19 pandemic, reminded consumers that local suppliers may be more reliable.

**Environmental impact of transportation:** Growing concerns about the environmental impacts of transportation. In the United States food system, direct to consumer and intermediated chain can reduce food miles by ~90 percent compared to mainstream.<sup>53</sup>

**Food sovereignty/resilience:** Food self sufficiency has been highlighted as a national priority for many countries.

**Economic:** Increased interest in local community economic benefits, e.g. a study showed shifting 20 percent of food spending to locally produced in the city of Detroit would create 4,700 jobs locally.<sup>54</sup>

## Risks and barriers

- New Zealand's distance to many of its markets.
- Reduction in demand for New Zealand export products.
- New Zealand consumers have decreased access to imported food items, reducing the variety of food available in New Zealand.
- Local production may result in lower production volumes, higher food prices globally and higher emissions.
- Techniques like vertical farming often require large energy inputs.

## Opportunities

- Emphasise low-emissions production to overcome food-miles emissions concerns.
- Development of products and intellectual property around local production technologies.
- Invest in offshore food production/processing facilities to serve export markets locally.
- Innovation in product development using ingredients that cannot be produced locally in export markets, like indigenous products.
- Develop technology that enhances traceability of product to connect consumers to producers.
- Develop or deploy solutions to reduce energy and transportation costs of food production.
- Offer truly differentiated products to overcome the 'local only' bias.

“  
*Local food will be more and more important.*  
”  
– Youth workshop attendee

**Enablers:** Advances in technology are making it easier for individuals to know more about product provenance, grow their own food easily and access food produced at a local level.



### Aquaponic Farming

Suitable for urban and peri-urban spaces, e.g. FarmPod, a fully automated co-production system of fish and hydroponics.



### Local Ingredients

Local alternative ingredients e.g. Rooty – a potato-based alternative to noodles, rice and pasta for Finnish consumers.



### Indoor Farming

e.g. 26 Seasons a New Zealand based vertical farming platform.



### Floating Farms

Circular animal farming models adapted to urban settings, e.g. a pilot dairy farm system in Rotterdam.



# DIRECT TO ME

Consumers are increasingly looking for products involving minimal effort and time. These include meal kits, ready-to-eat snacks and single-serve items. Many of these products are designed to be more health-conscious than traditional convenience foods. With the growth of decentralised and democratised distribution technologies, brands and producers will interact directly with consumers, bypassing traditional retailers or intermediaries. These technologies enable brands to build relationships with their consumers, tailor their offerings to individual preferences and gain unprecedented insight into consumer behaviour.

Global online food delivery market valued US\$128 billion, is growing yearly <sup>55</sup> by **7.2%**

## Driven by:

**Shifting consumer-supplier relationships:** Enabled by new technologies that allow bypassing of the traditional intermediaries.<sup>56</sup>

**Increasing urbanisation and growth of the middle class:** These are time poor but with relatively high wealth, used to easy access to services.

**The “instant generation”:** Generation Z and younger are now used to social media and other innovations that give instant feedback.

**Dissolving borders:** Technologies enable decentralisation and cross-border societies. Power not defined by territory but control of flows of people, goods, money, and data. Increasing diversity creating wider tastes.

**Delivery revolution:** COVID-19 accelerated a trend towards home delivery, with increasing access to automated delivery and tracking systems.

## Risks and barriers

- Limited food storage and transport infrastructure for direct to worldwide consumer.
- Overcoming regulatory requirements relating to direct food services in other countries.
- Costs of smaller/individual consignments.
- Little real knowledge about market dynamics, growth potential or consumer behaviour exists.
- Delivery-based markets can be impacted by supply-chain issues.

## Opportunities

- Explore new channels of supply that are being enabled by technologies that cut out the middle-person.<sup>56</sup>
- Invest in international standard setting and trade facilitation rules development that facilitates direct-to marketing
- Develop better capability in direct-to-consumer marketing and supply to consumers in target countries to meet their requirements.
- Invest in tech solutions that enable direct-to-consumer supply, including traceability and other tracking applications that connect consumers directly into regulated safety systems.
- Connect New Zealand food producers with up and coming e-commerce, smart ordering and automated food preparation companies.

**Enablers:** technology developments are likely to transition this market from locally based e-commerce delivery companies to more personalised automated ordering and delivery systems. Ultimately, cross-border solutions could enable connection into worldwide supply.



### Automated food preparing machines

These provide meals with minimum human intervention, connected to food ordering systems. Includes vending and home based, as well as 3D food printing.



### Ready made food and meal kit delivery

Automated ordering and delivery systems incorporate tracing systems and checking for quality and safety. Integrated with other delivery systems.



### AI – Smart kitchens

Single interface that recognises preferences, orders groceries, suggests recipes and assists with meal preparation. Sensors detect food spoilage and track ingredients.



### E-commerce platforms

A wide range on offer will continuously expand including online delivery, meal subscription, online food marketplaces, and meal delivery platforms. Potential for a mega-company to emerge.

“ We support the option to build New Zealand’s direct-to-consumer capabilities. ”

– Industry body

# EXPERIENCE SEEKERS



Experience seekers are a growing group of consumers who don't just want a product or service, they want an experience. They want to engage with food products and services and develop meaningful brand relationships that foster a sense of fulfilment and belonging.<sup>57</sup>

They demand food experiences that are authentic, unique and memorable and that meet their individual tastes. This group responds strongly to brand marketing.

58%

of global consumers believe it is important to spend money on experiences.<sup>58</sup>

## Driven by:

**Rise of experiential marketing:** Consumers are looking for ways to engage with brands on a more personal level. This has led to a surge in experiential marketing, which focuses on creating memorable experiences for consumers that foster brand loyalty and strong emotional connection.

**Personalisation:** Consumers want brands to provide them with personalised experiences that are tailored to their individual needs, interests, and in-groups.

**Technology:** Technology is enabling brands to create more interactive and immersive experiences that are connected, interactive, and tailored to the individual.

## Risks and barriers

- Many New Zealand food brands embrace traditional marketing formats and so may fail to grow at pace with growing markets.
- High start-up and ongoing costs in entering new markets and maintaining compelling consumer-oriented brands.
- Significant scale and long-term brand development are increasingly important in targeted markets.

## Opportunities

- Implement long-term strategy for New Zealand's brand that builds in the New Zealand experience.
- Provide experiences through products that leverage New Zealand's brand image e.g. help consumers feel pure and natural.
- Emphasise cultural attributes and stories, and through novel ingredients that tell a story. There is particular opportunity here with Māori indigenous foods.
- Align service-driven products with New Zealand's tourism industry. Bring the New Zealand experience into overseas consumers' everyday lives.

*Leveraging technology here, ideally through industry partnerships, can deliver experiences without the need for travel and logistics of bringing people to the country directly.*

– Industry body

**Enablers:** Work is underway on scent releasing, taste and texture devices such as electrical stimulation for VR and the field of molecular gastronomy is now well advanced.



### Virtual reality dining

Diners are transported to a virtual world where they experience dining at restaurants around the world. Guests enjoy the same sights, sounds and tastes as if they were in restaurant.



### Indigenous/local food experiences

These foster connections to the culture of a country – e.g. Māori indigenous food, or full farm-to-table experiences.



### Molecular gastronomy

This combines food chemistry to create dishes with unique and interesting textures, flavours and presentations. Combined with VR to create full immersion experiences.



### Restaurants

Restaurants will connect into all these experiences with sustainable personalised, immersive and multi-sensory experiences. Many will grow their own ingredients or use innovative new ingredients.



# BACK TO NATURE

Consumers in this group make conscious choices to include natural food as a staple of their diet. These consumers are aware of their impact on the world and will demand ethical practices, sustainability and zero carbon as a non-negotiable in the food production ecosystem.

Some might also demand no additives and organically grown produce.

“Free from” claims rank the highest in western markets.<sup>59</sup>

The global consumer market for natural and organic products is estimated to be worth US\$360B by 2031.<sup>60</sup>

## Driven by:

**Health & wellness:** The global wellness market is estimated at more than US\$1.5 trillion, with annual growth of 7.5 percent.<sup>61</sup> Consumers are looking for ways to improve overall health, reduce stress and look better.

**Environmental:** Consumers consider environmental issues to be the most severe risk to the globe over the next 10 years, with Governments around the world introducing policies to combat these.

**Sustainability:** Sustainability is becoming the new normal, with consumers now actively pursuing products from companies that champion sustainability.

**Food safety:** An increased focus on food safety post-COVID. Natural foods are being sought by consumers due to both safety and nutritional value.

## Risks and barriers

- Correlation between individuals who purchase natural foods and also want to purchase locally could disadvantage New Zealand due to our geographical location.
- New Zealand can lean on its clean, green reputation. However, by 2050, it is likely that this will be expected as standard and it may become more difficult to obtain a premium.

## Opportunities

- New Zealand’s regulatory controls on genetic modification compared to other countries could become a competitive advantage with this group of consumers.
- Revise and market our value proposition to include wider ethical and environmental practices as well as emissions reduction.
- Consider opportunities for “contrary” or “free from” offerings, e.g. free from artificial additives.
- Explore opportunities to develop food waste, emissions and water reduction systems and environmentally sound food-production technologies.

“Citizens are more prepared to base their buying habits on ethical concerns, including animal welfare.”

– Individual

**Enablers:** Technologies and systems are emerging that enable consumers to purchase directly from natural food suppliers and trace food back to farms that follow sustainable practices.



### Online markets

e.g. *Thrive Market*: Online grocery store that sells organic pantry staples, supplements, sustainable meet, plant-powered cleaning products and beauty products at discounted prices.



### Increasing access

e.g. *Imperfect Foods*: an online grocery delivery service that sources and delivers fresh, imperfect produce at discounted prices. “Farmers market quality at supermarket prices”.



### Certification

e.g. In 2019, Amazon co-founded *The Climate Pledge* which focuses on helping consumers find organic food and beverages that have been independently audited and certified.



### Traceability

e.g. *Food Chain ID*: an app that traces the origin of food back to the farm. The farms location and type of farming method is available for users. FoodChain ID also offers organic and non-GM verification.

# EVOLVERS



While consumers are typically less open to innovations in the food space than other areas, new market segments may begin to be carved out by 2050 as food security, safety and sustainability become bigger concerns for consumers, with affordability and nutrition necessitating greater variety in personal diets.

Greater openness to other cultures could also increase acceptance of food from cultures that are new to consumers.

Younger generations worldwide are more accepting of GM food.<sup>62</sup>

**90%**  
increase in microorganism– based proteins is estimated by 2030.<sup>63</sup>

## Driven by:

**A growing global middle class** demographic with greater levels of expendable income and access to new markets and products.

**Climate change**, as well as food safety and biosecurity threats putting pressure on traditional food systems.

**A growing understanding among consumers** about what is required for food resilience and sustainability and what options are available to them.

**Ongoing globalisation** and exposure to new cultures.

## Risks and barriers

- Gene-edited and genetically modified food are under strict New Zealand regulation at present.
- There are significant barriers to import of biomaterial.
- There is low public understanding about the new technologies.
- New Zealand's experience levels with development of novel foods.
- Food neophobia (fear of novel foods).
- Other reasons for rejection include unfamiliar sensory properties, price, how functional the product is perceived to be, disgust and feelings of unnaturalness.<sup>64</sup>

## Opportunities

- Hold a conversation on gene editing and/or wider genetic modification technologies.
- Alternative proteins and gene-edited products may see an initial market in pet food and animal feed.
- Ensure that we have ways to protect our IP, e.g. strengthening of plant variety rights and bioprospecting, especially in relation to indigenous flora and fauna.
- Expand consumer knowledge of Māori culture and novel indigenous products.
- Better understanding of consumer acceptance of technologies and public education campaigns.

**Enablers:** Novel food products could arise from various technologies, including gene editing, fermentation, new ways of farming, nanotechnology and automation.



### 3D printed food

Initially used as a novelty, but by 2050, may be advanced enough to produce staples at home.



### Nutraceuticals

Made with indigenous food and fibre ingredients. Māori producers are likely to tap into indigenous bioactives.



### Advances in GM

Allowing higher yields, improved nutrition, better taste, reduced need for pesticides, more sustainable production.

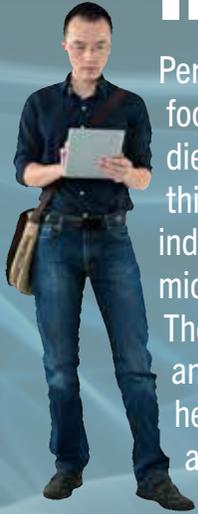


### Alternative proteins

e.g. plant and insect-based protein and lab-grown meat as the cost of animal-based proteins increases.

*Crops with modified genetics could make us more resilient to climate change but we need good regulation to go with it.*

– Youth workshop attendee



# INDIVIDUALISTS

Personalised nutrition is a field of nutrition science that focuses on providing advice tailored to the individual dietary and lifestyle needs of a person. By 2050, we expect this to be accelerated by technological advances that allow individualised treatments based on the consumer's unique microbiome, DNA, health measures and personal goals. The link between food and medicine becomes blurred and individualised solutions to food intake to treat health issues becomes part of medical prevention and treatment.

**66%**  
think that a healthy diet depends on each person's own biology.<sup>65</sup>

**52%**  
of Asian consumers want food that is personalised to match their needs.<sup>58</sup>

## Driven by:

**Health & wellness:** The wellness industry is booming, with more people looking for ways to improve their overall physical and mental health.

**Ageing populations:** Increasing number of elderly worldwide looking to diet to address health needs and improve quality of life.

**Pressure on health systems:** Driving from a focus on treating disease to one focused on care and prevention, with a healthy diet as a key catalyst.

**Cultural beliefs:** Many consumers in the fastest growing countries connect health of the body with diet.

**Economic:** Cost of treatment for diet-related illness such as diabetes, the need to reduce waste and the cost of feeding larger numbers of people.

**Enablers:** Advances in technology are making it easier for individuals to better understand their unique needs and target and track their diet to address health and wellbeing issues.

## Risks and barriers

- Focus on individualised health requirements means the cost of production is likely to be higher.
- There are a lot of unproven claims about the benefits of personalised nutrition.
- Lack of consumer awareness of personalised nutrition and its potential benefits.
- Access to personalised analysis and information may cause data privacy issues.

## Opportunities

- Investment in research to develop individualised nutrition products to meet the specific needs of the growing and ageing populations.
- Development of education services such as seminars, webinars and other forms of outreach to inform consumers.
- Institute standards for personalised nutrition services such as quality assurance and best practices – integrated with the health system.
- Consider integrating personalised nutrition solutions into the New Zealand medical system – and then selling the solutions to export markets.

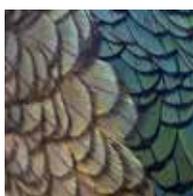
“*There is a strong health connection, consumers will want to pick what is best for them nutritionally.*”

– Social organisation

<p><b>Supplements</b> e.g. Care/Of: an online vitamin and supplement subscription service. It offers personalised recommendations.</p>	<p><b>Smart tracking</b> Wearable devices, smart appliances, food sensors and AI combine to track consumer intake, e.g. Vitl: provides comprehensive health tracking solutions.</p>	<p><b>Targeted to DNA</b> e.g. Nutrigenomix: a personalised nutrition platform that provides recommendations tailored to an individual's genetic profile.</p>	<p><b>Personalised meal</b> Meal kit delivery services designed to match individual dietary requirements.</p>

# Consumer pathways: opportunities

We have categorised the main opportunities we identified in the consumer demand pathways into four promising areas. These are not all new but are likely to be growth areas to watch as technology and global trends push consumer preferences in this direction.



## Weightless exports

Provision of IP and tech solutions, advisory services and experiences as well investment in offshore production.

Weightless exports are lower emitting and would help us to diversify our options in the event of future shocks to our export markets.

### Invest in technology – agritech, food and medical

- Sell IP to export markets, to help improve agricultural productivity and sustainability.
- Leverage rapid development in technology and digitisation: AI, big data, DNA testing, VR, and GM.
- Invest in off-shore food production and processing facilities to serve export markets locally.
- Partner with leading countries to build capability.
- Develop new varieties that excel in climate-controlled farming or as alternative proteins.

### Provide food-based services

- Food education – especially related to origin, personalised nutrition and new technologies.
- Align our food and tourism industries. Integrate the New Zealand experience into overseas consumers' everyday lives.
- Experiences that leverage New Zealand's brand e.g. help consumers feel natural and good.



## Strong origin stories

Future consumers may be increasingly interested in origin stories of food, to add authenticity to their food experience.

Aotearoa's point of difference is its unique story. Building New Zealand's brand to leverage this may resonate well with the 2050 consumer.

### Aotearoa New Zealand provenance stories

- Products that emphasise New Zealand provenance stories – including connecting our Māori, multigenerational farming, and pacific stories to the food we produce.
- Products that cannot be produced locally in other countries such as Māori indigenous products.
- Innovation in product development which utilises local ingredients in food products.

### Traceability solutions

- Utilise technology that enhances traceability of the product journey through the supply chain, with the opportunity to connect consumers to the local producer community.



## Premium/ Value-add

Both our existing western markets and an urbanised middle class in growth countries may fuel demand for premium products.

Products that attract high premiums allows revenue growth without added export volumes and transport costs.

### Food as medicine

- Aging consumers in all markets are likely to demand products with health and nutrition propositions, with supplements and traditional medicines particularly popular in Asia.

### Personalised food

- Significant opportunities to tap into the personalised nutrition market.

### Natural food

- Natural, grass-fed and organic food.
- Contrary offerings, with "free from" claims.

### Tech-based

- Develop tech-enabled, high-value food solutions and reach consumers in new innovative ways to leverage high uptake of personal digital devices.
- Alternative proteins and gene edited products, initially in pet food and animal feed and may be increasingly accepted for human consumption.



## Direct to consumer

Democratisation and decentralisation of markets could be common in 2050 – should we shift from customers to consumers?

Direct supply to consumers is occurring in many other sectors. It is an option given increasing bargaining power of our consumers.

### Review channels of distribution

- Explore new channels of supply enabled by technologies that decentralise supply systems.
- Develop assurance applications that enable full traceability and connects directly into regulated safety systems.
- Develop better capability in connecting directly to export consumers in target countries.

# Consumer pathways: opportunities

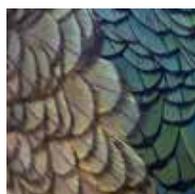
Contributors generally agree with the need for diversification in addition to maintaining New Zealand's current export mix.

## Our future exports

New information and capabilities may be needed to encourage development of innovative products and services to customers and consumers in emerging export markets.

Many contributors noted that there is no need to limit our options. In addition to maintaining our relationships with our current customers, we can pursue both new innovative products and our traditional products, both alternative proteins and animal proteins, both natural and genetically modified food.

However, we are unlikely to have the resources to do it all. Lack of clarity on the exports New Zealand pursues could also muddy our value proposition or competitive advantage. A better understanding of what is needed to develop new opportunities will help to identify where resources are best placed.



## Build capability in “weightless” services

There is support for the development of 'weightless' services such as food tourism, IP, advisory or offshore investment. Contributors agreed that these are unlikely to fully replace export of food ingredients. Some contributors cautioned any reduction of export of bulk physical goods could harm global food security.



## Develop strong origin stories

The development of products with strong origin stories resonated with a number of contributors. Many of the opportunities around enabling origin stories may involve the use of indigenous species, so engagement with Māori is seen as key.



## Support value-add and premium products

The consumer demand pathways present a wide array of opportunities that could be captured by our exporters. Contributors noted the importance of technology, including genetic modification. Some pointed out that our regulatory system suits large commodity exporters, but can be a barrier for small to medium businesses looking to develop new innovative products.



## Build direct-to-consumer capabilities

Beyond maintaining our relationship with customers, New Zealand is not naturally set up to serve overseas consumers directly. Many New Zealand brands may find it difficult to keep up with consumers who are likely to respond better to direct-to-consumer and other digital marketing. Better information about consumer demand is also key. Exporting branded consumer products can also require significant marketing investment.

## Contributors' ideas

- Support for IP and service delivery capabilities
- Ensure Māori and other IP and data is protected
- Work with Māori exporters
- Pan-industry New Zealand provenance programme
- Invest in technology
- Revisit the conversation on genetic modification
- Make regulatory system for value-add exports enabling
- Build knowledge of international consumers
- Support the sector in developing direct-to-consumer capabilities

# Shifting markets

By 2050, while our traditional export markets will remain wealthy, we should also expect major growth in Asia and Africa, both in population and wealth.

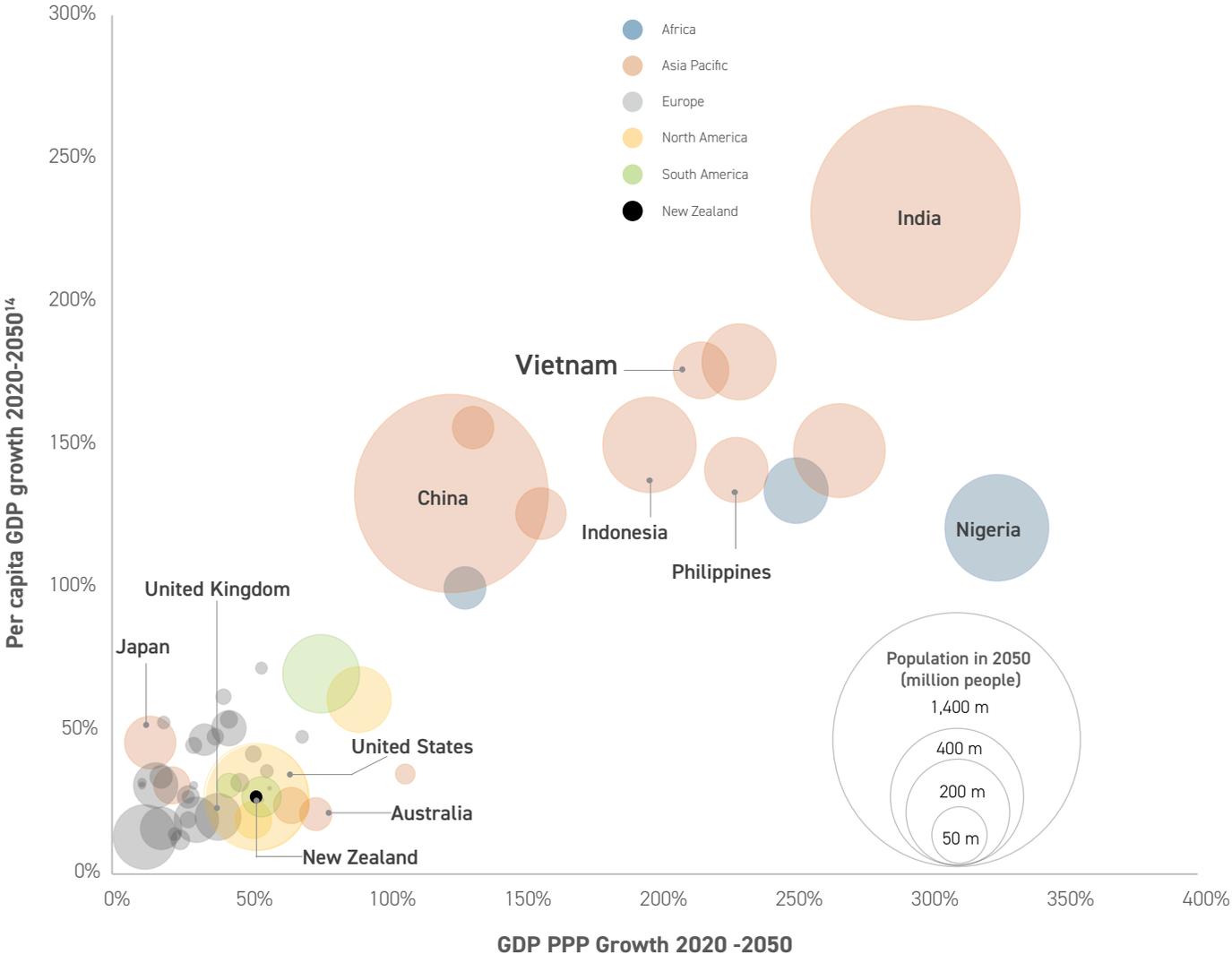
In addition, the 3 billion people who will enter the middle class by 2050 are likely to almost exclusively come from today's emerging markets.<sup>8</sup>

One way to protect against shocks to New Zealand's 2050 exports is to consider whether we diversify the portfolio of markets we serve. Knowing which markets are likely to have the best fit with the future consumer demand pathways may help us to decide.



# Shifting markets: growth to 2050

## Market growth to 2050<sup>66</sup>



## Traditional markets

We remain well placed in our traditional markets in Europe, the US, North-Asia and Australia. They have sizeable and wealthy consumer populations, with GDP per capita continuing to increase by 2050. We are familiar with these markets and have built relationships with them over a long period of time.

They are relatively low risk characterised by low growth, relatively stable prices and more stable consumer preferences. Demand for our existing products is likely to remain strong. For example, projected meat and dairy imports by China are expected to increase 20 percent by 2050.

## Growing markets of 2050

Although growing from a lower base, some Asian and African markets are expected to experience extreme nominal and per capita GDP growth compared to traditional markets. For example, GDP per capita in India and Southeast Asia is expected to match China's current level by 2050.<sup>67</sup> Almost all of the 3 billion people who will enter the middle class by 2050 will come from today's emerging markets.<sup>8</sup>

These markets are generally higher risk but also present potentially higher reward over the long term. For example, food demand in India is expected to outstrip its ability to provide for the domestic market by 2035. These markets are characterised by varying prices with a longer-term upward trajectory as a result of increasing wealth and faster-moving consumer preferences.

# Shifting markets: growth to 2050

## GDP PPP rankings



● Growing markets (sample)  
● New Zealand's current major markets  
 (New Zealand currently ranks 49th)

“ There are 60 million Millennials in Europe. There are 600 million in Asia. ”

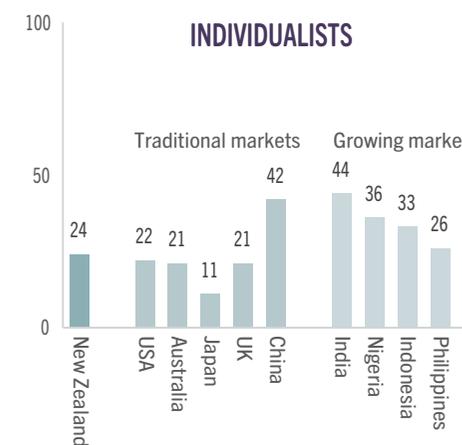
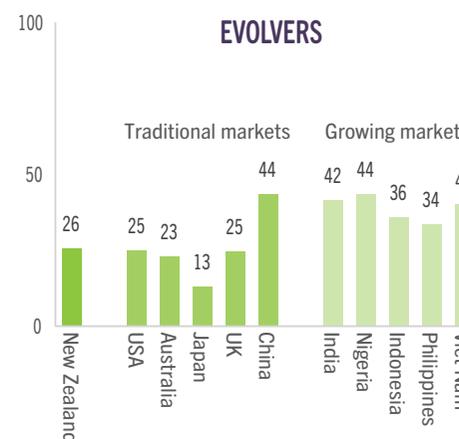
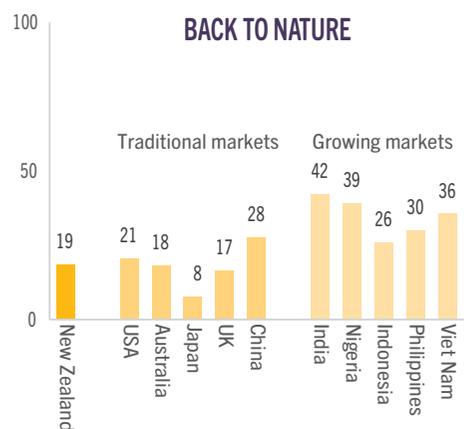
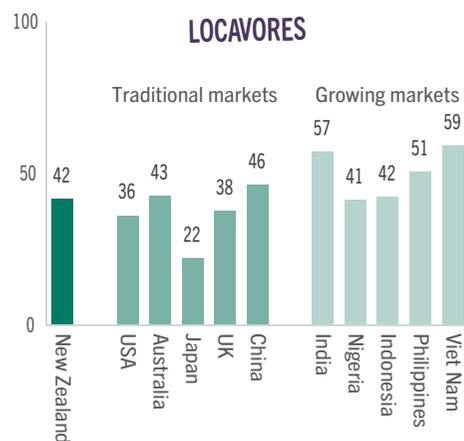
– New Zealand-based NGO

# Shifting markets: fit with consumer pathways

We assessed consumer preferences in some sample high-growth markets and our traditional markets to understand the level of interest in our six consumer demand pathways.

Our initial analysis shows the growing markets of Asia and Africa have consistently higher levels of fit with the demand pathways. Our traditional markets, with the exception of China, have consistently lower fit with the demand pathways. However, traditional markets do show higher potential for *Locavores* and *Experience Seekers*.

More detailed analysis is required to properly understand the market fit of all the different markets with our consumer demand pathways, and in particular how these might change out to 2050. But, this analysis does show how market and consumer knowledge can guide our choices.



To assess market fit with the demand pathways, we examined the results of six recent multi-market consumer surveys by Euromonitor<sup>68</sup> and Mintel.<sup>69-73</sup> We looked for measures in these studies that capture the essence of what each demand pathway represents. For example, for *Individualists*, we used survey questions that asked consumers if they want food products and services uniquely tailored to them, own fitness wearables/health tracking devices, are interested in future food concepts where food is personalised to match their DNA characteristics, are willing to pay more for food/drink that is customised to their nutritional needs and use apps for diet and/or nutrition tracking and advice.

# Shifting markets: opportunities

While consumers in our current markets will remain wealthy, with growing wealth in Asia and Africa, most contributors agree that there is potential to complement and diversify our existing portfolio of export markets, but we will need more information.

## Our future exports

The balance between our traditional markets and potential growth markets may need to change in the future.

Contributors generally agreed that there is significant potential to diversify to add some of the growing markets, especially our Asian neighbours, to our portfolio of markets. It is possible that their growing middle classes and Millennials may be more likely to be interested in the future consumer pathways. However, our knowledge of these markets is poor. For example, only 22 percent of New Zealanders know a fair amount about South Asia, while 30 percent know a fair amount about Southeast Asia.<sup>74</sup>

Some contributors cautioned that there is still significant opportunity in existing markets, but this has been limited by historical underinvestment in marketing and promotion budgets, limiting the ability to build strong category brands.

“*Maintaining existing access and negotiating new access with emerging markets remains the best long-term strategy for mitigating risk and for maximising New Zealand’s optionality.*”

– Industry body



## Develop cultural competencies in and relationships with consumers in growing markets

As noted by PwC in its recent analysis of changing Asian consumers, “a deeper, more granular grasp of consumers’ behaviour and food trends across Asia’s heterogeneous markets will be needed to allocate capital efficiently and capture higher returns.”<sup>40</sup> This will be needed as a precursor to trade agreements and removal of barriers in these markets. This could include better understanding of the market fit with the consumer demand pathways as well as our traditional export mix. We will also need to build relationships, cultural capability and ethnic and gender diversity into New Zealand’s government and food sector leadership, tapping into our own increasingly diverse population.



## Build recognition of our value proposition

Many of the growing markets present challenges for New Zealand, ranging from cultural differences to trade barriers. There are long lead times to building relationships. In addition, development of growing markets may require us to build cognitive recognition of our brand with end-consumers in those markets. Again, long lead times are needed, in the order of decades.

“*In New Zealand we build relationships from transactions. In Asia, you can’t transact until after you have the relationship.*”

– New Zealand-based NGO

“*We attend a lot of conferences in Asia where we see major change happening. It is worrying to see lack of New Zealand attendance at Asia forums.*”

– Individual business



In our exploration of international consumer demand, we found that, while there is still likely to be significant demand for our existing export mix, there is likely to be an increasingly diverse range of opportunities from a wider range of products and markets by 2050.

To capture these opportunities, and to maintain our own resilience, we will need to keep our value proposition aligned with expanding consumer expectations, diversify our export mix and put more effort into emerging markets.

# So what?

## Capturing opportunities

- Recap
- Sector challenges
- Wider issues
- Connecting the dots
- What next
- Conclusion



## Our exploration of the nature of consumer demand by 2050 shows that the future looks bright for New Zealand – with potential in every direction.

But how well are we positioned to capture these opportunities, and what wider connected issues do we need to consider?

In this concluding section, we report back on what we heard from contributors, and their views on the role of government and industry in helping to move forward.

### RECAP

A summary of the ideas generated in the previous section to build our reputation, diversify our exports and expand our markets.

### SECTOR CHALLENGES

A brief scan of the challenges contributors told us they were likely to face if we want to capture the consumer-led opportunities.

### WIDER ISSUES

Contributors also raised wider issues relating to domestic food security, food system resilience and land-use changes that may need to be connected.

### CONNECTING THE DOTS and WHAT NEXT?

Bringing it all together.

# Capturing opportunities: recap

In section 3, we found that changing consumer demand may require governments, the sector and the community to think differently about our reputation, our exports and our future markets. Here, we summarise the ideas that may help to capture future opportunities.

## Expand our reputation

New Zealand's current value proposition will need to keep pace with changing consumer needs.

## Diversify our exports

To serve future consumers, diversification is needed in addition to maintaining our current product mix. This means we need new information and capabilities to encourage development of innovative products and services for customers and consumers.

## Build our markets

The balance between our traditional markets and potential growth markets (especially Asia) may need to change in the future.



### Build New Zealand's long-term value proposition

We could develop a long-term value proposition (master brand) that includes our current advantages and reflects changing consumer needs but still allows for companies to differentiate themselves.



### Build consumer trust

Traceability and transparency are seen as crucial tools to enable consumers and regulators to directly confirm where their food comes from and how it meets their needs – building on industry's current models.



### Manage reputational shocks

This includes both urgent planning to reduce risks of shocks (climate, safety, geopolitical etc.) and managing end-consumer reactions.



### Support development of weightless exports

Weightless exports would help us to diversify our options in the event of future shocks to our export markets. Support for IP and service development may be needed.



### Focus on origin stories

We would need ways to protect Māori IP and data through counterfeit monitoring, strengthened plant variety rights and clarification on bioprospecting policy. We could support development of a pan-industry provenance programme.



### Develop value-add and premium

A conversation about how to take advantage of biotechnology and maintain our reputation for 'natural' foods might be useful. We might also need to make our regulatory system more enabling.



### Build direct-to-consumer capability

Direct-to-consumer and other digital marketing capability could be developed. Build our knowledge of international consumers.



### Develop cultural competencies in and relationships with high growth markets

More detailed studies are needed to better understand the consumer preferences in individual growing markets. We also need to build relationships and cultural capability and diversity in New Zealand's leadership.



### Build recognition of our value proposition

It takes a long time to build recognition and trust towards New Zealand's brand image with end-consumers. This could start first with local expat communities in the growing markets of 2050.

# Capturing opportunities: sector challenges

Contributors identified a number of challenges that may need to be addressed before the sector can take advantage of consumer-driven export opportunities.

**Knowledge of consumer markets:** A number of contributors noted that New Zealand agribusiness was very product-led rather than consumer-led.

*We see potential for a national centre of excellence for market insight, bringing industry experts together and not reinventing the wheel constantly across different agencies and sectors.*

- Industry body

**Links with other sectors:** Many opportunities overlap with our other export sectors like health, tourism, the Māori economy, education and innovation.

*Alignment across government is necessary to prevent contradictions and roadblocks.*

- Industry body

**Market access for SMEs:** The market access system does not work for small and medium enterprises.

*Using levies, groups of producers get together and work with government to get market access. There is no similar system that SME's can access.*

- Industry body

**Difficulties navigating the system:** Companies new to exporting or looking to do something new are finding it difficult to find the right people in government to assist.

*Adaptable processes to enable faster response times for agile innovators might be an underlying process that could be addressed.*

- Start-up business

**Issues with the regulatory system:** These range from regulatory burden, need for harmonisation, IP protection, bioprospecting, limitations on GM technology and import.

*Look to benchmark regulations against countries that export value-added food.*

- Industry body

**Development of technology:** Many of the opportunities require funding and strong capability in a wide range of technology and R&D fields.

*It does feel there is a lot of research, insight and pointing in the right direction but less support and incubation for smaller agribusiness start-ups.*

- Industry body

**Access to capital/cost of change:** There are high start-up costs for entering new markets, maintaining consumer-oriented brands, adopting new farming methods and scaling new technologies. Government funds also do not span the whole value chain.

*There is a need for support to innovate and modify business models – this is hugely challenging given existing investments in plants, labour forces and small margins.*

– Industry body

**Access to new genetic material:** New Zealand's horticultural and agricultural producers require accelerated access to new high-value plant varieties.

*Assuming we have easy access to innovative genetics or that they are bred in New Zealand is erroneous. 92 percent of New Zealand's horticultural exports in 2021 were from 10 crops.*

– Individual business

**Energy and infrastructure:** New farming techniques like vertical farming or precision fermentation are likely to require high energy inputs. Many opportunities will also require wider infrastructure investment.

*Government will have an important role to play in convening exporters, road, rail and port operators and others to develop a shared understanding of vulnerabilities and priority actions.*

– Individual business

**Skill development and access to talent:** Many of the opportunities require skilled R&D, tech and marketing professionals.

*In Waikato, everything begins and ends with the cow – but this is changing – if we have reduction in cattle numbers how do we develop the skills and capabilities for the new systems?*

– Public workshop attendee

**Supply chain issues:** Concerns about the potential for ongoing issues with supply chains.

*Without a clear focus on creating an internationally competitive supply chain that is efficient, reliable and cost-effective, there is a risk that New Zealand exporters will operate with a growing disadvantage in the years ahead.*

– Industry body



# Capturing opportunities: wider issues

We also heard that there are wider, cross-cutting issues to consider more holistically as we plan for the future ahead.

## Domestic consumer demands

*We want to export high-quality food overseas, but it would be good to have cheaper, better produce in New Zealand too.*

– Youth workshop attendee

As worldwide demand for food increases and climate change impacts on the world food system, our export markets will pay more for our produce. This means that costs to our domestic consumers may also increase, resulting in accelerating demand to “feed New Zealanders first” and for government to ensure that food remains affordable.

We heard from many contributors that coherence in strategy between domestic food equity and choice and our trade export system may be needed.

Improving our GDP per capita by increasing the value of our exports will help as the primary sector is integral to our economy. However, it is likely that future New Zealand consumers will expect governments to address domestic equity issues relating to food access. As noted by one industry body, “the primary sector’s social licence to grow and farm may be at risk if providing healthy food for the domestic market is overlooked”.

There are already efforts to acknowledge this, for example, the *Fit for a Better World*<sup>6</sup> strategy includes feeding all New Zealanders in its vision. However, addressing domestic food equity is a complex issue and not one that the primary sector alone can resolve. A sustained cross-government and industry effort would be needed.

## Our food system resilience

*We need to think about climate retreat and actively support food producers and their communities to relocate.*

– Industry body

For many contributors, Cyclone Gabrielle and other recent severe weather events has brought into stark relief the urgent need to build resilience into our food system.

This may include ensuring that existing infrastructure is strong enough to withstand increasing impact as well as more systematic planning for where crops and animals can be farmed, shifting to new, more resilient crops (which may necessitate genetic modification), less reliance on pasture-fed animals, new farming methods like vertical farming and going under cover, addressing water use issues and, where required, a “managed retreat” plan for some in the sector.

Contributors noted that increased resilience will increase our own domestic food security resilience as well as our ability to meet future export consumer demands.

There are existing programmes, e.g. the National Adaptation Plan for Climate Change – that aim to address this. MPI also has a significant amount of information and planning in this space.

## Changing land and oceans use

*Offer pathways for land-use diversification for farmers.*

– Workshop attendee.

We heard some calls for more diversified use of our land and oceans if we decide to diversify to meet changing consumer demands or address climate impacts.

In particular, some contributors are concerned about New Zealand’s “intensive monoculture” approach to animal farming. They also noted that there could be unintended consequences of mass transition to plant monocultures, e.g. in response to a need to reduce climate emissions or to meet consumer demands for alternative proteins. The relationship between land-use for food and non-food products is also an issue.

Others raised concerns about the impacts of climate change on the land and oceans and implications for resilience of the food system, while some noted the need to better recognise the connectedness between Māori and the whenua (land) and moana (ocean) – including place, soil and ecosystems.

These issues also bring up wider cross-cutting questions, that will require a holistic approach to address. The Ministry for the Environment’s Long-term Insights Briefing *Where to from here? How we ensure the wellbeing of land and people*<sup>76</sup> initiates a discussion on these complex matters.



# Capturing opportunities: what next?

In our exploration of export global consumer demand out to 2050, we have identified 10 things that the Government, the sector and the community could work together on to capture future opportunities.

## Expand reputation



### Build New Zealand's long-term value proposition.

Consider support for a "master brand" that resonates with direct-to-consumer expectations around sustainability ethics and food sovereignty.



### Build consumer trust.

More tech-enabled traceability systems in partnership with industry.



### Manage reputational shocks.

Plan to reduce risks of shocks and manage end-consumer reactions.

## Diversify exports



### Support development of weightless exports.

Support for IP and service product development.



### Focus on origin stories.

Work with Māori on ways to protect IP and consider a pan-industry provenance programme.



### Develop value-add and premium.

Invest in technology, support SMEs to export and revisit the conversation on GM.



### Build direct-to-consumer capability.

Develop digital capability and knowledge of end-consumers.

## Build markets



### Develop cultural competencies and relationships in growth markets.

Studies to understand consumer preferences tapping into our diaspora populations.



### Build recognition of our value proposition.

Long-term plan to develop recognition of the New Zealand brand in emerging markets.

## Join up thinking



### Convene and facilitate joined-up thinking and collaboration.

Convene and facilitate collaboration across food, health, education, tourism and innovation sectors. Connect wider issues around domestic food, food system resilience and land use.

# Conclusion

## The future is bright for New Zealand's food sector

Through exploring consumer demand opportunities in the year 2050, we found many potential directions for New Zealand's future food exports. Demand for New Zealand's current product mix of mostly commodity ingredients is likely to continue. There are also significant opportunities to diversify into new products and markets to serve emerging end-consumer needs and aspirations. Diversifying our market coverage and export mix to meet consumer-driven needs should support resilience in our food sector. It may also bolster the reliability of our returns, potentially improve our environmental footprint and help achieve our *Fit for a Better World* and other strategic objectives.

### Expand our reputation

We have built a reputation as a safe, efficient and sustainable provider of quality food. As core consumer needs expand and preferences change, this may not be enough to differentiate ourselves with the consumers of 2050.

We need to be proactive to ensure that we keep up with consumer expectations around sustainability ethical production and food sovereignty. We also need to build trust mechanisms and plan for shocks.

### Diversify our exports

We explored six possible individual consumer demand pathways to watch: *Locavores, Direct-to me, Experience seekers, Back to nature, Evolvers* and *Individualists*. To serve them, diversification may be needed.

Opportunities exist in weightless exports, strong origin stories, premium and value-add and direct-to-consumer products. We will need new information and capabilities to encourage development of innovative products and services.

### Build our markets

Immense wealth and population growth in emerging markets will significantly change the global economy by 2050. We need to consider if we have the balance right between traditional markets and future growth markets.

We need more detailed consumer and market-led research to fully understand which markets are most likely to bear fruit. We may also need to put more effort into building our reputation with promising emerging markets, particularly in Asia.

In our discussions, we heard that there are many challenges to capturing these opportunities, including wider, cross-cutting issues that we could consider more holistically as we plan for the future. These include coherence between our food export trade strategies and domestic food security, the importance of our food system resilience and the implications for changing land use. We also heard a need for better linkages to other sectors such as health, education, tourism and innovation if we are to truly capture opportunities.

Many challenges are being recognised through a wide range of existing government programmes. Given the cross-cutting nature of many of these issues, government's role as a convener to bring people and programmes together will be key.



Our journey into consumer demand for food by 2050 has revealed a wide range of opportunities that Aotearoa New Zealand could pursue.

Many of these are emerging now. Lead times to capture them are long.

We will need to start now if we want to take advantage of these opportunities by 2050.

# Annex one: how this Briefing was developed

The subject for our Briefing was consulted on from 22 August to 16 September 2022. Submitters supported an opportunities-focused exploration of the future consumer demand side of food and fibre exports, noting that most analysis to date has been on the supply side.

To focus the scope, we decided to limit our Briefing to consumer demand for food exports. We do not specifically look at fibre, but many of the insights are also relevant to this sector.

To develop the Briefing, we explored the major trends and demographic changes that are likely to affect consumer demand out to 2050 and did an extensive literature review on likely future consumer demand for food.

We also held internal workshops and interviewed 33 industry and wider sector leaders and innovation ecosystem and industry bodies.

A draft Briefing was consulted between 1 February and 24 February 2023. Over 100 people and organisations engaged in the discussion through workshops, meetings and submissions, including individuals, industry bodies, advisory boards, private companies, research and innovation agencies, trade organisations, economic development agencies, Māori, young people, migrant community groups, other government agencies as well as our colleagues across the Ministry for Primary Industries. See [www.mpi.govt.nz/consultations/exploring-demand-opportunities-in-2050-for-aotearoa-new-zealands-food-sector/](https://www.mpi.govt.nz/consultations/exploring-demand-opportunities-in-2050-for-aotearoa-new-zealands-food-sector/) for summaries of submissions.

## Acknowledgements

We would like to thank all of those who have contributed their time and effort to development of this Briefing: those we interviewed or who met with us, those who prepared public consultation submissions, general public and youth webinar attendees and all others who took the time to contribute to peer review or provide comment on the Briefing.

Contributors included:

- 33 industry and wider sector representatives interviewed.
- 38 webinar attendees across two for general public and one for youth.
- 10 additional companies we met with on the draft Briefing.
- 8 who submitted on the topic of the Briefing.
- 20 who submitted on the draft Briefing.
- Various government agencies for peer review and discussion of the Briefing.

We saw wide representation from the following sub-sectors: arable, beverages (both alcoholic and non-alcoholic), dairy, horticulture, poultry, processed foods, red meat and seafood. The range of stakeholders was broad: accelerators, Crown Research Institutes, demographic group representatives, economic development agencies, individuals, industry bodies, interest groups, iwi, private companies, producers (both large and SME), start-ups, state owned enterprises, universities and wider government.

In addition, we would like to thank those forestry companies that engaged with us prior to the narrowing of the scope of the Briefing. The final options provided are also reflective of the input you provided and those challenges faced by the sector.

Having a wide range of interests covered provided a rich source of information for the Briefing and allowed us to develop an understanding of the nuances of each option put forward. We look forward to progressing these further and thank you all for your contributions.

# References

1. MPI. (2022). Situation and Outlook for Primary Industries. <https://www.mpi.govt.nz/resources-and-forms/economic-intelligence/situation-and-outlook-for-primary-industries/>
2. Statistics New Zealand. (n.d.). Trade Dashboard. [https://statisticsnz.shinyapps.io/trade\\_dashboard/](https://statisticsnz.shinyapps.io/trade_dashboard/)
3. Te Puna Whakaaronui. (2022). WELL\_NZ: Reframing New Zealand's Food Sector Opportunities. <https://www.fitforabetterworld.org.nz/assets/Te-Puna-Whakaaronui-publications/Reframing-New-Zealands-Food-Sector-Opportunities.pdf>
4. MPI. (2022). Rautaki mo te Taurikura: Embracing Change for Prosperity – The Manatū Ahu Matua plan, in partnership with Ngā Pouwhiro Taimatua, for supporting the Māori food and fibre sector to prosper. <https://www.mpi.govt.nz/dmsdocument/54376>
5. AERU. (2022). Implications of Global and Domestic Extreme Weather Events on New Zealand's Agricultural Production.
6. UN Department of Economic and Social Affairs. (2022). World Population Prospects 2022. [https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022\\_summary\\_of\\_results.pdf](https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf)
7. UN Department of Economic and Social Affairs. (2020). World Social Report 2020. <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report2020-FullReport.pdf>
8. WHO. (2022). Ageing and Health. <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>
9. UN Department of Economic and Social Affairs. (2018). World Urbanization Prospects 2018. <https://population.un.org/wup/publications/Files/WUP2018-Highlights.pdf>
10. HSBC. (2012). Consumer in 2050. [https://www.lampadia.com/assets/uploads\\_documentos/0abb2-hsbc\\_report\\_consumer\\_in\\_2050\\_en.pdf](https://www.lampadia.com/assets/uploads_documentos/0abb2-hsbc_report_consumer_in_2050_en.pdf)
11. European Commission Joint Research Centre. (2018). Demographic and Human Capital Scenarios for the 21st Century: 2018 assessment for 201 countries. <https://op.europa.eu/en/publication-detail/-/publication/e1853ba8-4444-11e8-a9f4-01aa75ed71a1/language-en>
12. World Resources Institute. (2019). Creating a Sustainable Food Future: A Menu of Solutions to Feed Nearly 10 billion People by 2050. <https://files.wri.org/d8/s3fs-public/wrr-food-full-report.pdf>
13. Statistics New Zealand. (2022). National Ethnic Population Projections: 2018. <https://www.stats.govt.nz/information-releases/national-ethnic-population-projections-2018base-2043>
14. PwC. (2017). The World in 2050. <https://www.pwc.com/gx/en/research-insights/economy/the-world-in-2050.html>
15. Forsyth, J. (2022). Inside the Curious Culinary World of Gen Z: Sustainability & Purpose. <https://www.mintel.com>
16. Cerulli Associates. (2022). U.S. High-Net-Worth and Ultra-High-Net-Worth Markets 2021: Evolving Wealth Demographics. <https://www.cerulli.com>
17. OECD. (2021). Demographic Old-age to Working-age Ratio. <https://www.oecd-ilibrary.org/sites/d9aef235-en/index.html?itemId=/content/component/d9aef235-en>
18. UN Food and Agriculture Organisation (2011) Global Food Losses and Food Waste <https://www.fao.org/3/mb060e/mb060e00.pdf>
19. UN. (2021). UN Food Systems Summit 2021: Dismantling Democracy and Resetting Corporate Control of Food Systems. <https://www.frontiersin.org/articles/10.3389/fsufs.2021.661552/full>
20. The Power Atlas. (2021). The Power Atlas. <https://www.ecfr.eu/special/power-atlas/>
21. Hunter, T. (2019). 5 Technologies that will Dominate the Future of Food for Decades. <https://www.futuristforfood.com/2019/01/16/5-technologies-that-will-dominate-the-future-of-food-for-decades/>
22. Bloomberg. (2020). An Economist's Guide to the World in 2050. <https://www.bloomberg.com/graphics/2020-global-economic-forecast-2050>
23. Deloitte. (2022). The Future of Food: Challenges and Opportunities. [https://www2.deloitte.com/content/dam/Deloitte/be/Documents/future\\_of\\_food\\_2022\\_v2\\_consumer\\_deloitte\\_be\\_report\\_en.pdf](https://www2.deloitte.com/content/dam/Deloitte/be/Documents/future_of_food_2022_v2_consumer_deloitte_be_report_en.pdf)
24. World Bank. (2022). What You Need to Know About Food Security and Climate Change. <https://www.worldbank.org/en/news/feature/2022/10/17/what-you-need-to-know-about-food-security-and-climate-change>
25. World Economic Forum. (2022). Why the Circular Economy is the Business Opportunity of Our Time. <https://www.weforum.org/agenda/2022/05/why-the-circular-economy-is-the-business-opportunity-of-our-time/>
26. WHO. (2021). Antimicrobial Resistance. <https://www.who.int/health-topics/antimicrobial-resistance>
27. OECD. (2016). Megatrends to 2050: What Better Policies for Better Lives? <https://www.oecd.org/about/secretary-general/megatrends-to-2050-what-better-policies-for-better-lives.htm>
28. World Resources Institute. (2018). How to Sustainably Feed 10 billion People by 2050, in 21 Charts. <https://www.wri.org/insights/how-sustainably-feed-10-billion-people-2050-21-charts>
29. WBCSD. (2022). Food Affordability: How can the Food Industry Provide Affordable, Nutritious Foods to Support Healthy and Sustainable Diets? <https://www.wbcds.org/contentwbc/download/14604/208448/1>
30. FAO. (2022). The State of Food Security and Nutrition in the World. <https://www.fao.org/3/cc0639en/cc0639en.pdf>
31. World Bank. (2021). Groundswell: Acting on Internal Climate Migration Part II. <https://www.openknowledge.worldbank.org/handle/10986/36248>
32. FAO. (2014). Economic Analysis of Supply and Demand for Food up to 2030 – Special Focus on Fish and Fishery Products. <https://www.fao.org/3/i3822e/i3822e.pdf>
33. WHO. (2015). WHO's First Ever Global Estimates of Foodborne Diseases Find Children Under 5 Account for Almost One Third of Deaths. <https://www.who.int/news/item/03-12-2015-who-s-first-ever-global-estimates-of-foodborne-diseases-find-children-under-5-account-for-almost-one-third-of-deaths>

34. FSANZ. (2021). Safety Assessments of GM Foods. <https://www.foodstandards.gov.au/consumer/gmfood/safety/Pages/default.aspx>
35. Petrescu, D. et al. (2020). Consumer Understanding of Food Quality, Healthiness, and Environmental Impact: A Cross-National Perspective. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6982126/pdf/ijerph-17-00169.pdf>
36. Deloitte. (2022) Fresh Food as Medicine for the Heartburn of High Prices. <https://www2.deloitte.com/us/en/insights/industry/retail-distribution/future-of-fresh-food-sales/fresh-food-as-medicine-for-the-heartburn-of-high-prices.html>
37. Wealth Management. (n.d.). Advances in Food Technology Can Help in the Fight Against Climate Change. <https://www.rbcwealthmanagement.com/en-us/insights/advances-in-food-technology-can-help-in-the-fight-against-climate-change>
38. Sobal, J. et al. (2006). A Conceptual Model of the Food Choice Process Over the Life Course. <https://www.cabidigitallibrary.org/doi/pdf/10.1079/9780851990323.0001>
39. Mintel. (2022). A Flavor Memory Library to Preserve Taste Experiences. <https://www.mintel.com>
40. PwC. (2021). The Asian Food Challenge: Understanding the New Asian Consumer. <https://www.pwc.co.nz/industry-expertise/food-production/afc-report-202109.pdf>
41. Matrous, M. (2018). The Evolution of Convenience. <https://www.foodbusinessnews.net/articles/11698-the-evolution-of-convenience>
42. MPI Market Insights. (2022). Unpublished industry interviews on the long-term insights briefing.
43. McKinsey. (2022). Does ESG Really Matter – and Why? <https://www.mckinsey.com/capabilities/sustainability/our-insights/does-esg-really-matter-and-why>
44. Boston Consulting Group. (2022). Consumers are the Key to Taking Green Mainstream. <https://www.bcg.com/publications/2022/consumers-are-the-key-to-taking-sustainable-products-mainstream>
45. F+B Tech. (2021). Carbon Border Tax: NZ Exports Could Take a Hit. <https://www.fbtech.co.nz/2021/07/21/carbon-border-tax-nz-exports-could-take-a-hit/>
46. Deloitte. (2022). Scope 1, 2 and 3 Emissions. <https://www2.deloitte.com/uk/en/focus/climate-change/zero-in-on-scope-1-2-and-3-emissions.html>
47. Boretti, A. & Rosa, L. (2019). Reassessing the Projections of the World Water Development Report. <https://www.nature.com/articles/s41545-019-0039-9.pdf>
48. Deloitte. (2022). Striving for Balance, Advocating for Change: The Deloitte Global 2022 Gen Z & Millennial Survey. <https://www2.deloitte.com/content/dam/Deloitte/at/Documents/human-capital/at-gen-z-millennial-survey-2022.pdf>
49. MPI. (2017). New Zealanders' Views of the Primary Sector. <https://mpi.govt.nz/dmsdocument/27582-new-zealanders-views-of-the-primary-sector>
50. Timmermann, C. et al. (2018). Food Sovereignty and Consumer Sovereignty: Two Antagonistic Goals? <https://www.tandfonline.com/doi/abs/10.1080/21683565.2017.1359807>
51. Mintel. (2022). Global Consumer – The Holistic Consumer. <https://www.mintel.com>
52. Mintel. (2022). Global Consumer – Consumer Attitudes: Supply Chain, Ethical and Environmental. <https://www.mintel.com>
53. King, R. et al. (2010). Comparing the Structure, Size, and Performance of Local and Mainstream Food Supply Chains. [https://www.ers.usda.gov/webdocs/publications/46405/7029\\_err99\\_1\\_.pdf?v=0](https://www.ers.usda.gov/webdocs/publications/46405/7029_err99_1_.pdf?v=0)
54. Shuman, M. (n.d.). Economic Impact of Localizing Detroit's Food System. <https://fairfoodnetwork.org/wp-content/uploads/2016/10/Economic-Impact-of-Localizing-Detroit-Food-System.pdf>
55. The Business Research Company. (2022). Online Food Delivery Services Global Market Report. <https://www.thebusinessresearchcompany.com/report/online-food-delivery-services-market>
56. MBIE. (2022). The Future of Business for Aotearoa New Zealand: An Exploration of Two Trends Influencing Productivity and Wellbeing – Purpose-led Business and Use of Blockchain Technology. <https://www.mbie.govt.nz/dmsdocument/20250-the-future-of-business-for-aotearoa-new-zealand>
57. Vargo, S. & Lusch, R. (2014). Evolving to a New Dominant Logic for Marketing. <https://journals.sagepub.com/doi/10.1509/jmkg.68.1.1.24036>
58. Euromonitor. (2022). Voice of the Consumer: Lifestyles Survey. <https://www.euromonitor.com>
59. MPI Economic Intelligence Unit. (2020). "Free from" – EUI Consumers Survey.
60. Allied Market Research. (2020). Natural Food and Drinks Market. <https://www.alliedmarketresearch.com/natural-food-and-drinks-market>
61. McKinsey. (2021). Feeling Good: The Future of the \$1.5 Trillion Wellness Market. <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/feeling-good-the-future-of-the-1-5-trillion-wellness-market>
62. Mintel. (2022). Consumer Survey Database. <https://www.mintel.com>; MPI Market Insights. (2021). Unpublished consumer survey.
63. PwC. (2022). The Novel Food Market: Key Trends and Considerations. <https://www.pwc.com/it/it/publications/assets/docs/pwc-the-novel-food-market.pdf>
64. Tuorila, H. & Hartmann, C. (2020). Consumer Responses to Novel and Unfamiliar Foods. <https://www.sciencedirect.com/science/article/pii/S2214799319300797>
65. Mintel. (2022). Global Consumer – Food and Drink Survey June 2022. <https://www.mintel.com>
66. OECD. (2022). GDP Long-term Forecast. <https://data.oecd.org/gdp/gdp-long-term-forecast.htm>; PwC. (2022). The World in 2050. <https://www.pwc.com/gx/en/research-insights/economy/the-world-in-2050.html>; World Bank. (2022). Population Estimates and Projections. <https://databank.worldbank.org/source/population-estimates-and-projections>; MPI Market Insights. (2022). Unpublished analysis. Note. Figure uses GDP PPP (gross domestic product adjusted for purchasing power parity).
67. Zhao, H. et al. (2021). China's Future Food Demand and its Implications for Trade and Environment. <https://www.nature.com/articles/s41893-021-00784-6.pdf>
68. Euromonitor. (2022). Voice of the Consumer: Lifestyles Survey. <https://www.euromonitor.com>
69. Mintel. (2022). Global Consumer – Holistic Consumer Survey Sept 2022. <https://www.mintel.com>
70. Mintel. (2022). Global Consumer – Food and Drink Survey Sept 2022. <https://www.mintel.com>
71. Mintel. (2022). Global Consumer – Food and Drink Survey March 2022. <https://www.mintel.com>
72. Mintel. (2022). Global Consumer – Food and Drink Survey Sept 2021. <https://www.mintel.com>
73. Mintel. (2022). Global Consumer – Food and Drink Survey March 2021. <https://www.mintel.com>
74. Asia Media Centre. (2020). New Zealanders' Perceptions of Asia and Asian People. <https://www.asianz.org.nz/assets/Uploads/Perceptions-of-Asia-2019.pdf>
75. MPI. (2020). Fit for a Better World: Accelerating our Economic Potential. <https://www.fitforabetterworld.org.nz/assets/publications/fit-for-a-better-world-roadmap.pdf>
76. Ministry for the Environment. (2022). Where to from Here? How we Ensure the Future Wellbeing of Land and People

