

DRAFT

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A strategy for New Zealand Food Safety 2019-2024



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Image source: Getty Images

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BACKGROUND

Our food safety system is an important part of the lives of New Zealanders, as well as our economy.

New Zealand Food Safety (Haumaru Kai Aotearoa) is a business unit of the Ministry for Primary Industries. It regulates the New Zealand Food Safety system. At New Zealand Food Safety, our core purpose is that food is safe to eat and in the right condition for its intended use.

Each day, 4.9 million New Zealanders interact with our food system repeatedly.¹ At New Zealand Food Safety, our core purpose is that food is safe to eat and in the right condition for its intended use. It is what brings us together, nourishes us, and sustains us.

We know that New Zealand food plays an equally important role in the lives of 40 million consumers each month, from over 200 countries, who look to us to provide safe quality food for their families and communities.²

New Zealand's world-class food safety system is the backbone of our economy. This system keeps consumers safe and empowers them to make informed choices. It is trusted by trading partners and supports New Zealand food exporters to sell their products to the world. More than 80 percent of New Zealand's total export revenue comes from food and food-related products.³

New Zealand strives to produce the most trusted, sought after and sustainably produced food in the world. Our food safety system is fundamental to gaining the trust of trading partners and consumers world-wide.

Our food safety system is based on a relatively simple premise of identifying and managing risks and having someone check that this is being done adequately. But this simple premise is incredibly complex when put into practice, with a huge range of food activities, from neighbourhood sausage sizzles to multi-ingredient food processors, all being covered by food safety legislation, and all needing to have tailored approaches that work for them.

And on top of all this, exported food often needs to comply with the different requirements and expectations of our trading partners. Our system needs to assure our trading partners that they can trust our products, to facilitate trade.



Image source: Darryl Ward via NZStory.com

BY THE NUMBERS

SPOTLIGHT ON THE NEW ZEALAND FOOD SECTOR

\$4.9M **\$49.4B** **95K** **1 in 7**

New Zealand based consumers

Turnover of the food manufacturing industry for the year ending June 2018

Number of food related businesses in New Zealand

Food sector as a whole provides jobs and income for approximately 1 in 7 New Zealanders

SPOTLIGHT ON TRADE

80% **44%** **40M** **5.6B**

Proportion of New Zealand-grown food exported offshore

Increase in the value of New Zealand's primary sector exports over the last 10 years

Number of international consumers who eat New Zealand food each month

Food imports into New Zealand for the year ending June 2018.

SPOTLIGHT ON FOOD-RELATED RISKS

2,078 **\$160M** **130** **245K**

Number of food complaint investigations we have completed over the last five years

Estimated annual cost of foodborne illness, in New Zealand

Number of food recalls that we helped businesses manage in 2018

Number of New Zealand adults with type 2 diabetes. As a country we have one of the highest rates of type 2 diabetes in the world

OUR WORK

4 ACTS **100%** **16K** **\$32.7B**

Four Acts of Parliament govern the New Zealand food system: the Food Act, the Animal Products Act, the Wine Act and the Agricultural Compounds & Veterinary Medicines Act

Proportion of high priority food safety complaints that we recorded and responded to within 24 hours of notification in 2017/18

Number of food businesses who benefited from easy-to-follow guidance about how to comply with the Food Act

Value of New Zealand food exports

FOREWORD

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Tēna koutou, tēna koutou, tēna koutou katoa

One of my top priorities is making sure that New Zealand Food Safety is focused on the future and is clear about how it will continue to meet the needs of New Zealanders and the millions of consumers around the world who buy New Zealand food. Safe and suitable food is not only necessary for our basic survival but across all cultures it is also a significant part of the way we connect with others.

I see developing this strategy as a way for Haumaru Kai Aotearoa (New Zealand Food Safety) to engage with Māori, as tangata whenua and Treaty partners, and deepen our understanding of kaitiakitanga in relation to Aotearoa's food safety system. This will allow us to make sure we can provide a safe (Haumaru) way to produce food (kai) for New Zealanders and 40 million overseas consumers.

This strategy will give us a clear direction of travel to anticipate changes in our environment and how we need to amend rules, use technology, and fulfil customer demands. By looking forward we will be able to strike a good balance between delivering results today and acting on opportunities that will deliver results tomorrow.

Being clear about our strategic priorities will mean we can invest in mobilising and upskilling our people to focus on preparing for the biggest challenges and continuing to improve our systems and processes for the future.

Right now, world food safety systems are under pressure because consumers demand more and different types of food, overseas partners want to trade in different ways and in greater volumes, and global effects such as climate change, are impacting how food is produced. This strategy will allow us to keep consumers safe and healthy and retain the trust of our trading partners.

An important theme in the strategy is that our food safety system must be based on rigorous scientific evidence, and that we support others to be innovative and experiment with new ideas while managing risk. We will do this through operating differently, looking for new solutions to problems and developing new internal capabilities to be more efficient and effective.

New Zealand Food Safety is here for you, to uphold your trust in New Zealand's food safety system, and to help you navigate and understand the rules. We need your help so that we can make sure we are doing this as well as we can both today and tomorrow.

Ngā manaakitanga



Bryan Wilson
Deputy Director-General New Zealand Food Safety



WHY DO WE NEED A STRATEGY?

New Zealand must continue to position itself as a leader in food safety system. A future focused strategy will allow New Zealand, and New Zealand Food Safety, to continue to build a system that produces food that is safe to eat.

Right now, world food safety systems are under pressure because consumers demand more and different types of food, overseas partners want to trade in different ways and in greater volumes and global effects, such as climate change, are impacting how we produce food in New Zealand.

For New Zealand Food Safety to be able to address these challenges, seize opportunities as they arise, and perform its role as a food safety system regulator, we need a strategy that clearly identifies the direction of travel it must take to keep our food safe.

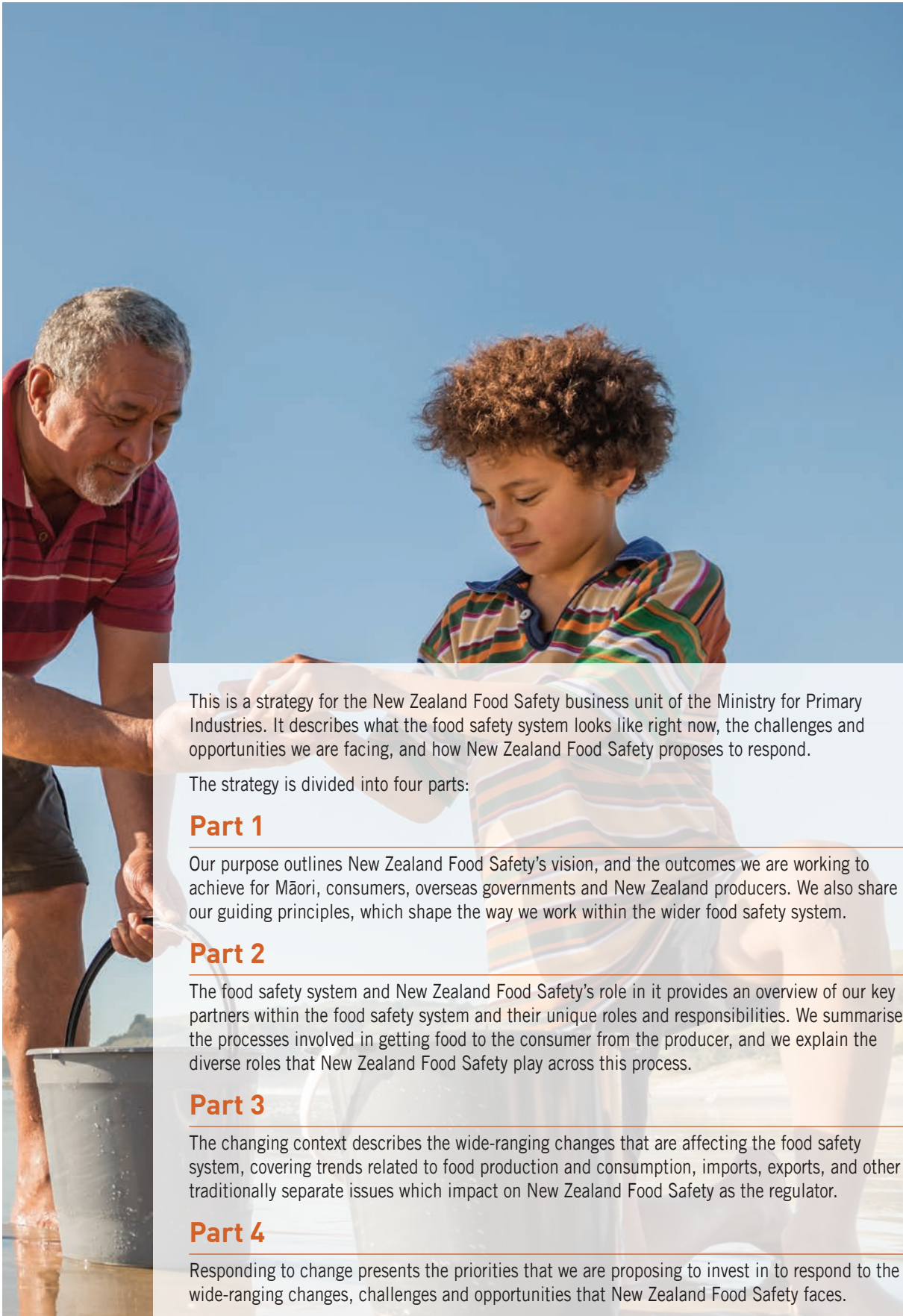
This strategy will allow us to continue to keep consumers safe and healthy, retain the trust of our trading partners and ensure our food exports will continue to be sort after.

We have listened to consumers, industry and sector partners so we can understand what they want, need and expect from the food safety system. However, this is just the start of a dialogue with our customers that we intend to make an ongoing capability built into our daily work.

Together with our horizon scanning we have identified some emerging risks and opportunities the food safety system needs to address:

- **PRESSURES ON PRODUCTION:** increasingly complex and global supply chains, sophisticated “food fraud” and climate change are putting pressure on how we produce and export our food.
- **CONSUMER EXPECTATIONS AND DEMANDS:** consumers are becoming savvier about what they eat and trying new and different food in new ways.
- **NEW TECHNOLOGY AND INNOVATION:** developments in hazard detection and risk prevention and advances in new foods and production methods have created both positive opportunities and risks in the food safety system. We have identified that we are not effectively responding to changes on the horizon and must equip ourselves to be able to do so.
- **CLIMATE CHANGE:** as temperatures rise on land and in the sea, New Zealand may need to produce food in different ways, or produce different kinds of food. To future-proof New Zealand’s food production methods we need to respond to the impacts of climate change and the new risks it imposes on food safety.

Our strategy addresses these emerging issues. Key priorities have been developed which focus our resources on being able to respond to these challenges.



This is a strategy for the New Zealand Food Safety business unit of the Ministry for Primary Industries. It describes what the food safety system looks like right now, the challenges and opportunities we are facing, and how New Zealand Food Safety proposes to respond.

The strategy is divided into four parts:

Part 1

Our purpose outlines New Zealand Food Safety's vision, and the outcomes we are working to achieve for Māori, consumers, overseas governments and New Zealand producers. We also share our guiding principles, which shape the way we work within the wider food safety system.

Part 2

The food safety system and New Zealand Food Safety's role in it provides an overview of our key partners within the food safety system and their unique roles and responsibilities. We summarise the processes involved in getting food to the consumer from the producer, and we explain the diverse roles that New Zealand Food Safety play across this process.

Part 3

The changing context describes the wide-ranging changes that are affecting the food safety system, covering trends related to food production and consumption, imports, exports, and other traditionally separate issues which impact on New Zealand Food Safety as the regulator.

Part 4

Responding to change presents the priorities that we are proposing to invest in to respond to the wide-ranging changes, challenges and opportunities that New Zealand Food Safety faces.

EXECUTIVE SUMMARY

PART 1: OUR PURPOSE

New Zealand Food Safety regulates the New Zealand food safety system to make sure food is safe to eat and in the right condition for its intended use.

Our vision is that New Zealand food can be trusted by everyone, everywhere. The outcomes we work towards every day will enable us to achieve this vision. The following outcomes are what we are working to achieve:

- Māori have trust and confidence in the food safety system because we work in partnership.
- Consumers can be confident that food is safe and suitable, and they can make informed choices.
- Overseas governments have trust and confidence in our food safety system.
- Producers have trust and confidence in the food safety system and it supports their growth and innovation.

Because food is such a core part of life for New Zealanders, the food safety system contributes to our countries' broader social and economic outcomes. This includes sustainable development, health and wellbeing, regional development and better outcomes for Māori.

To achieve these outcomes what we do is important, but so is how we do it. The guiding principles for our strategy can be found on page 19.

PART 2: THE FOOD SAFETY SYSTEM AND OUR ROLE IN IT

The food safety system is based on the premise that food-related risks need to be identified and managed. This can be complex when put into practice, as our food safety system covers all food activities and processes, and interactions at the local, national and international levels. All of this food needs to be safe and suitable. When working with industry we take a risk-based approach to the level of involvement we have. This is based on the food safety risk of the product being created and the potential for harm to consumers if the food is unsafe.

Those who have unique roles in this food process are:

- Consumers should have safe and suitable food, and clear information that enables them to make informed choices. They play an active role in keeping themselves safe, by taking care when handling and preparing food.
- The food industry is responsible for producing food in a safe manner, and for adhering to food safety rules and standards. It works best when the rules are evidence-based and practical to follow.

- Overseas governments are responsible for protecting their domestic consumers when it comes to food safety. They can achieve this when they receive accurate and clear information from those who they trade with.
- Māori have cultural and spiritual obligations to provide food at hui, on marae and in a variety of settings in order to maintain the dignity and mana of kaumātua (Māori elders), whānau, hapū and iwi. This requires knowledge of tikanga with regards to sustaining the sanctity of kai by continually promoting food safety and suitability, safe food handling and food hygiene practices, and the relationship of these with the nutritional objectives for marae.
- Regulators and verifiers set the rules, check businesses are following the rules and provide other support for the system. This includes New Zealand Food Safety, local councils, third party verification agencies and laboratories.

PART 3: THE CHANGING CONTEXT

Around the world, significant changes are occurring right across the food safety system from producer to consumer, and many of these changes are happening at speed.

There are emerging pressures on the production side, from new on-farm inputs to increasingly sophisticated food fraud that can erode reputation and brand value.

Yet there are also positive opportunities, with technology and innovation enabling food to be produced and processed in new and potentially safer ways, and with advances in hazard detection and risk prevention.

There are changes to the consumption of food. People are increasingly interested in the food they eat and are consuming new foods, in new ways, which presents both opportunities and challenges. Engaging with consumers will help them have confidence in their ability to make informed choices.

When it comes to trade in food, we are seeing a greater focus by regulators on consumer expectations, strengthening of food safety regimes, and an increased complexity in global supply chains.

As the regulator, we are facing exciting opportunities from data analytics and technology, alongside an increasing need for specific skills, and competition for these skills.

PART 4: RESPONDING TO CHANGE

In response to these changes, New Zealand Food Safety needs to ensure the food safety system adapts.

We have identified four priority areas because we think they are the most essential for us to get right in the next five years, to deliver on our outcomes and ensure New Zealand food can be trusted by everyone, everywhere:

- **Our first priority is to ensure New Zealand's world-class food safety system remains robust in responding to future challenges.** We need to continue to deliver a world-class food safety system while responding to changes in our environment. We also need to ensure the right balance of enabling innovation while managing food safety risks.
- **Our second priority is to proactively support consumers to feel confident making choices about food.** We will engage more proactively with consumers about food-related risks, provide tools and information to promote safe food handling practices, and develop more effective methods to promote informed consumer choices.
- **Our third priority is to lead new thinking in international forums to expand our international influence.** We are proposing to do more to shape international standards, to enable the best possible access to global markets for New Zealand primary products, and to develop more robust and innovative assurances to facilitate trade.
- **Our fourth priority is that New Zealand Food Safety is an intelligence-led business that proactively prepares for the future.** For us to deliver on the above priorities, we need to build the capability required and ensure we are focused on the highest value activities going forward.

The proposed priorities do not cover everything that we will do however this is where we suggest focusing more of our attention, effort and resources for the next five years.

STRATEGY ON A PAGE

OUR VISION

New Zealand food can be trusted by everyone, everywhere

THE OUTCOMES WE ARE FOCUSED ON

Māori have trust and confidence in the food safety system because we work in partnership

Consumers can be confident that food is safe and suitable, and they can make informed choices

Overseas governments have trust and confidence in our food safety system

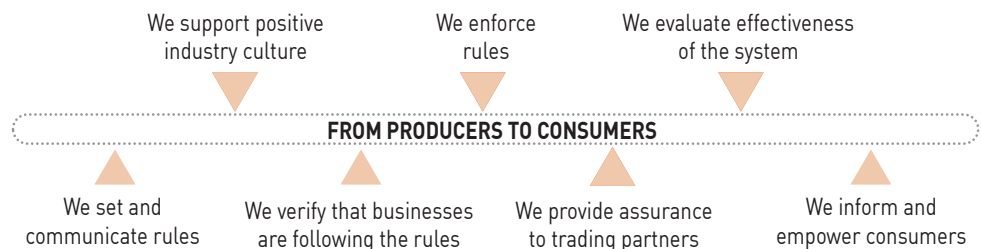
Producers have trust and confidence in the food safety system and the system supports their growth and innovation

We also contribute to broader social and economic outcomes working with others to improve the lives of New Zealanders

OUR GUIDING PRINCIPLES

- 01 We put consumers first
- 02 We listen and we engage
- 03 We are fair and proportionate
- 04 We are outcome driven
- 05 We make evidence-based decisions
- 06 We are open and transparent
- 07 We build the capability of our people
- 08 We work with others and get the job done

THE FUNCTIONS WE PERFORM



OUR PRIORITIES FOR THE NEXT FIVE YEARS

- 01 We will ensure New Zealand's world class food safety system remains robust in responding to future challenges.
- 02 We will proactively support consumers to feel confident making choices about food.
- 03 We will lead new thinking in international forums to expand our international influence.
- 04 We will be an intelligence-led business that proactively prepares for the future.

**Ko tāu rourou
Ko tāku rourou
Ka ora ai te iwi**

**By sharing your food basket with
my food basket, the people will thrive.**

PART 1

OUR PURPOSE, VISION AND OUTCOMES

New Zealand Food Safety regulates the New Zealand food safety system. We want food to be safe to eat and in the right condition for its intended use.

Our vision is that New Zealand food can be trusted by everyone, everywhere.

We work to ensure that every day:

- Māori have trust and confidence in the food safety system because we work in partnership.
- Consumers can be confident that food is safe and suitable, and they can make informed choices.
- Overseas governments have trust and confidence in our food safety system.
- Producers have trust and confidence in the food safety system and it supports their growth and innovation.

The cultural value of kai has its roots imbedded in the act of manaaki tangata (the giving and receiving of hospitality). Much of our culture as New Zealanders is centred around sharing and consuming food. It brings us together. New Zealand Food Safety wants to strengthen communication, engagement and relationships with Māori and other ethnicities in relation to food safety and food suitability. Part of this is understanding different perspectives, for example New Zealand Food Safety is exploring how mātauranga Māori science can be used as an input into our decision making.



Te Ao Māori, Kai and Haumaru Kai

There are cultural, social, environmental and economic dimensions to the relationship Māori have with kai.

Māori have an in-depth mātāuranga (knowledge) of the flora and fauna in Aotearoa, informing their production and consumption of food and use of medicines. From their many voyages and journeys from Polynesia and trans-Pacific migrations, Māori brought edible plants and meat from their homeland.

Māori consider that all aspects of life have a mauri (life force) and so it is with kai and places where kai is cultivated and gathered. The balance of food-producing resources were carefully maintained and protected by a mechanism known as rāhui (a temporary ban), especially applied when a resource was in danger of being depleted.

The cultural value of kai has its roots imbedded in the act of manaaki tangata – the giving and receiving of hospitality.

Because hospitality is so key to Māori culture tangata whenua have always maintained traditional values of food safety and food preparation practices, which emphasised a number of effective control points, pertaining to tikanga Māori protocols. The knowledge and history of traditional food sources, food safety and personal hygiene practices were placed and vested with ngā kaitiaki (guardians – certain people within the whānau, hapū or iwi designated to ensure the sanctity of kai was maintained) on behalf of the iwi for its survival.

Māori have a deep understanding of the sanctity of kai, including what it means to ensure food safety protocols, waste management and preservation of food stocks are maintained. This knowledge is then passed on for future generations, ensuring hunting grounds, seabeds, streams and rivers, bush and forest are not over depleted. This practice enables whānau, hapū and iwi to come to terms with the compliance processes and protocols attached to owning a food business in today's times.

THE OUTCOMES WE ARE WORKING TOWARDS

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Outcomes versus priorities – what is the difference?

Outcomes are the long-term goals or results that we are always working to achieve.

In contrast, priorities represent our focus for a particular period of time. They represent how we will achieve the outcomes. In this document, the priorities we have set are for the next five years. You can find them on page 42-45.

The outcomes that we are working towards are:

- Māori have trust and confidence in the Food Safety System because we work in partnership.
- Consumers can be confident that food is safe and suitable, and they can make informed choices.
- Overseas governments have trust and confidence in our food safety system
- Producers have trust and confidence in the system, and it supports their growth and innovation.

We explain each of these outcomes in more detail on the following pages along with more detail on our contribution to broader outcomes on page 17.



Māori have trust and confidence in the food safety system because we work in partnership

Māori, as tangata whenua and Treaty partners, have a key role in the food safety system and there is a growing realisation that what benefits Māori, also benefits Aotearoa.

New Zealand Food Safety wants to continue to engage with Māori to identify common aspirations and goals, and ways we can work together to advance mutual objectives. This has happened in some areas but there is still more that needs to be done.

Some of the initiatives Haumaru Kai Aotearoa has advanced its partnership with Māori include:

- The resource *Te Kai Manawa Ora (Māori Food Safety Guide)* was developed in 2009 after discussions with marae on kai practices and safety. The guide includes healthy kai options and traditional tikanga Māori practices and scientific risk-based information.
- The resource *He whakatairanga i ngā ahuatanga mahi mō te tunu hāngi (Food Safety practise in preparing and cooking a hāngi)*
- Partnering with Māori TV to promote food safety messages through their Kai Time programmes.

We are talking with marae and councils about how to support marae to comply with the food safety rules for the tourism industry. We are at the early stages of a conversation on exploring pathways for mātauranga Māori to be included in our decision-making.

Haumaru Kai Aotearoa recognises Māori agribusiness as an important part of New Zealand's economic development and with our Ministry of Primary Industries colleagues, Haumaru Kai Aotearoa is committed to supporting Māori agribusiness to grow and prosper.

Building a Māori and Crown partnership

The quality of the relationship between the Crown and Māori in New Zealand since the signing of the Tiriti o Waitangi in 1840 has varied across the country.

Forging a stronger Māori and Crown relationship is fundamental to improving the wellbeing of all New Zealanders. As a Crown agency, New Zealand Food Safety seeks to build a stronger partnership approach with Māori: to work as partners in commercial, social and cultural opportunities.

In building this partnership, New Zealand Food Safety will need to be mindful of the Crown's response to and engagement with Māori on the Wai 262 claim. The Wai 262 claim was filed in the Waitangi Tribunal in 1991. The claimants sought to establish who, if anyone, owns or controls mātauranga Māori (Māori traditional knowledge), traditional artistic and cultural expressions, the unique characteristics of indigenous flora and fauna, and New Zealand's natural environment.

KEY FACTS

Tangata Whenua have a long history of involvement in food businesses: from production to product development, processing, transporting and retail to export. Te Iwi Māori have major farming, fishing and tourism interests and are looking at development opportunities with mutual benefits. Collectively, Māori own:

- \$13 billion in primary sector assets;
- 30 percent of sheep and beef production;
- 50 percent of the sustainable fishing quota;
- 30 percent of land under plantation forests.⁵⁸

In 2015, Māori businesses contributed \$26 billion in revenue to the New Zealand economy.⁵⁸

Consumers can be confident that food is safe and suitable, and they can make informed choices

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PROGRESS MEASURES

Safe food

One of the major causes of foodborne illness is *Campylobacter*, and we have a target of reducing the number of *Campylobacteriosis* cases to 79.6 per 100,000 by the end of 2020. We are on track to achieve this, with the rate tracking down from 200+ cases per 100,000 people in 2007, to 78 cases per 100,000 in 2018. To keep us on track to meet this target we also have a risk management strategy.⁵

Consumer confidence

The New Zealand public are becoming more confident in our food safety system, and in New Zealand Food Safety's ability to keep food safe. When public surveys began in 2014, 66 percent of consumers had confidence that we help to keep food produced in New Zealand safe. In June 2016 (the most recent time the survey was conducted), this figure had increased to 70 percent. We are working hard to ensure this positive trend continues.

Food is essential for our wellbeing, central to our way of life, and often a real pleasure. New Zealanders rightfully expect their food to be safe and that they can enjoy what they eat without worrying that it may cause them harm. Consumers also expect that food is suitable, that it is what it says it is, and is accurately labelled.

Safe food

Food is safe if it does not make people sick. That means it should not cause illness or injury, if it is handled and consumed as intended.

New Zealanders generally assume their food is safe, and this is a good assumption. Our food standards are world-class, and our team works hard every day to make sure New Zealand food is safe.

Food safety matters because there can be serious health impacts and costs as a result of foodborne illness, as well as wider impacts on families and employers. In certain populations – including the young, the elderly, pregnant women and the immunocompromised – foodborne illnesses can be very serious and even fatal.

Suitable food

When food is suitable, it is what it says it is, with nothing in there that should not be. It should meet compositional, labelling and identification requirements and is in the right condition for its intended use. If you are eating a beef and cheese pie, then the pie should contain beef not a different meat product, and it should not have any non-food components in it. The product should also be fit to eat, not perished or “off”.

We work to ensure food is suitable because it is vital that consumers can trust what they are eating. As we have seen in other nations, there can be very real economic costs for businesses and for nations as a whole, if consumer trust is eroded.⁴

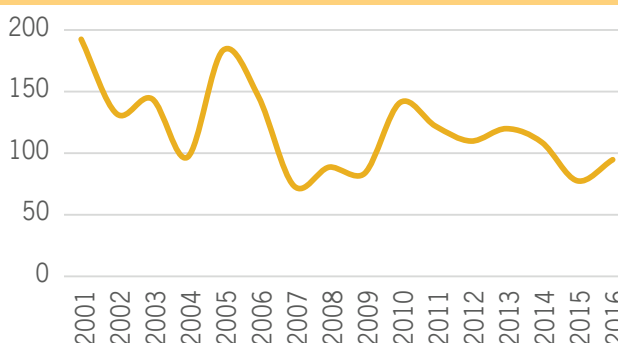
Informed choices

Consumers can make informed choices about food when products have clear, understandable and accurate information on the label. The label should clearly list the ingredients, explain which nutrients are present, and in what amounts, and which allergens are present. Labels also provide information about how to safely store and consume a product, and when to use a product by.

We work to ensure labelling on food is accurate because we want to help consumers to understand what is in their food.

An outbreak is when there are a number of associated illnesses. We are seeing positive trends when it comes to the rate of foodborne illness outbreaks. The number of foodborne disease outbreaks have been tracking down in recent years, as shown in the graph. Although good progress is being made, there is always room for improvement and we remain highly committed to keeping food safe for all.⁶

OUTBREAKS OF FOODBORNE DISEASE IN NEW ZEALAND 2001-2016



Source: ESR, Public Health Surveillance

Overseas governments have trust and confidence in our food safety system

New Zealand is an export oriented nation. Approximately 80 percent of the food that is produced in New Zealand is exported, and this food is enjoyed by around 40 million international consumers each month.²

If overseas governments have trust and confidence in our system, then New Zealand food will enjoy favourable access to markets.

Trust is also important for our food imports, as our trading partners also need to have confidence that we will follow international rules and agreements, such as World Trade Organisation agreements, when importing food. This is especially important because the value of food imports into New Zealand has increased more than 700 percent in less than 25 years, from US \$643 million in 1990 to US \$4.629 billion in 2014.⁷ Ensuring high standards for imported food is also important as some of what we import is used as ingredients either for food made for New Zealanders, or for food that we then export.

Fortunately, New Zealand is known as one of the most transparent and corruption-free countries in the world.⁸

People trust what we say, do and sell, and it is essential that we maintain these high levels of trust.

Spotlight on trade:

- New Zealand food is exported to an increasingly diverse range of markets. Our top five trading partners are China, Australia, the US, the EU and Japan.⁹ There has also been significant growth in the value of our exports to other markets in Asia, the Middle East and North Africa over recent years.
- New Zealand food imports totalled \$5.6 billion for the year to June 2018.³
- New Zealand's food exports (including beverages) accounted for \$32.7 billion, an increase of 34 percent compared to 2013.³
- In 2017, 20 percent of food manufacturers entered new export markets.¹⁰ The work we do with overseas governments helps these exporters to succeed.



Producers have trust and confidence in the food safety system, and the system supports their growth and innovation.

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The food industry provides an essential service, by producing, importing, processing and preparing food that we can all enjoy. It is vital that industry has trust and confidence in the food safety system, and that the system supports their growth. Industry must also play their part in contributing to outcomes for consumers and trading partners.

Trust and confidence in the food safety system

Industry needs to be confident the food safety rules are in place for sound reasons – to protect consumers, but also to protect the industry's interests. After all, one of the pre-conditions of success for a food business is that consumers know the food they are buying is safe.

Industry needs to understand the rules and be able to follow them. This is why we often work in partnership with industry and consult with them before rules are put in place. We also put effort into communicating the rules and providing guidance, for example helping 16,000 businesses to transition to the new Food Act with easy-to-follow guidance. Industry, consumers and trading partners also need to be confident we will enforce the rules when businesses do not comply with them. Enforcement takes into account the risk to the consumer and the intention of those involved. Without enforcement there is a chance the rules will be broken more often, and that responsible businesses will be impacted by the acts of irresponsible businesses.

The system supports industry growth

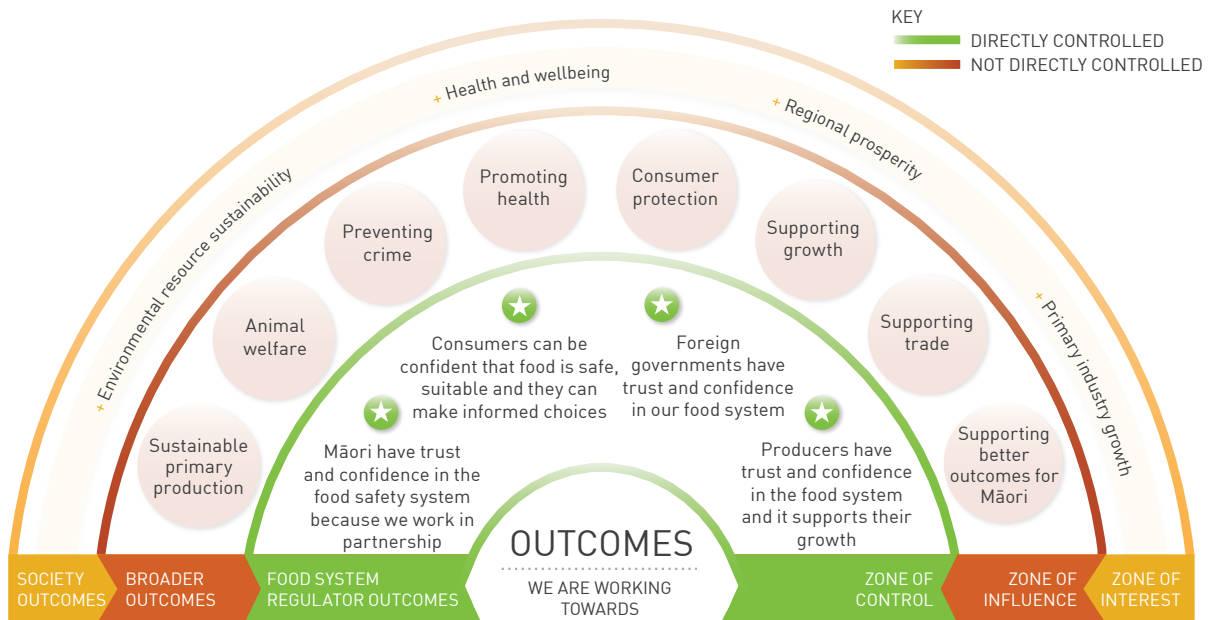
The food industry is a significant part of the New Zealand economy. The food and retail service industry had a turnover of \$34.9 billion for the year to June 2018, and food manufacturing turnover was \$49.4 billion.³

We want to continue to enable the industry to grow and thrive, through having a robust food safety system. This in turn creates jobs, opportunities and income for New Zealand.



BROADER OUTCOMES

We contribute to broader social and economic outcomes, working with others to improve the lives of New Zealanders.



Food is a central part of life. It is connected to land, to culture and to health. Food businesses and the people that work in them are a vital part of all communities.

Because of the centrality of food to everyday life, the work we do touches every single person in New Zealand, and millions of consumers around the world.

We support a broad range of social and economic outcomes, and promote the wellbeing of consumers by contributing to:

- **The broader government Living Standards Framework**, which measures intergenerational wellbeing by incorporating natural, environmental, social and economic outcomes for New Zealanders
 - Human Capital is enhanced as our work equips all participants in the food sector with the right skills and knowledge, from industry training to promoting food safety practices
 - Natural Capital, as the natural environment underpins the entire food safety system. We are conscious that resources such as land, soil, plants and animals are essential to sustain higher living standards for New Zealanders.
- **Wider outcomes for the Ministry for Primary Industries.** The Ministry for Primary Industries, with the key support of New Zealand Food Safety work to make sure the food and primary sectors build prosperity for New Zealanders and help New Zealand producers focus not only on volume but increase the value of their goods.
- **The work of the Primary Sector Council** to set a vision for the primary industries sector. As well as the Industry Strategy that sits alongside this vision and is being developed by the Ministry of Business, Innovation and Employment.

Following are some of the broader outcomes that we can influence.





Promoting health

The food choices that people make have a major impact on their overall health and wellbeing. It is important for New Zealand Food Safety to balance encouraging healthy eating and ensuring food remains safe. We promote health by having labels that support people to make healthier choices, such as health star ratings. We also work across health and other sectors on opportunities related to addressing obesity.

We promote health by setting some rules about the nutritional content of food through the Joint Australia New Zealand Food Regulatory System. For instance, iodine is vital for healthy development, including brain development. New Zealand soil is low in iodine, so to ensure that people get enough iodine in their diet, we set rules requiring iodine to be added to most bread and bread products.¹¹

Supporting sustainable primary production

As a country, we need to look after our land to ensure that it remains fertile and productive. This is essential if we want to continue to produce sufficient food for New Zealand, and our growing export markets.

In New Zealand, the activities of the food sector currently cover 52 percent of our land mass, and 4.4 million square kilometres of ocean.¹² This requires the sector to play a key role in the sustainability of these resources. At New Zealand Food Safety we play a role in sustainable food production, by putting in place rules about what agricultural compounds can be used on farms, and in what amounts.

Promoting animal welfare

We need to treat our animals well. It is the right thing to do, and it is also important to consumers who want to know more about where their food comes from and how it is produced. New Zealand Food Safety sets rules regulating how animal medicines are used by those who raise livestock.

Preventing crime

The New Zealand Police work with us to prosecute food businesses who recklessly break the rules and endanger consumers. These prosecutions can result in various actions, including significant fines and jail time for the people involved.

Supporting growth – including in the regions

Many food businesses are based in the regions – particularly businesses involved in processing primary products. The food and primary sector employs up to one in every three people, making it a critical part of community life, and regional development.¹⁰ When we support the food industry to grow, we support the regions of New Zealand by helping to keep businesses and jobs in rural areas.

Supporting trade

We are party to international trade agreements such as the World Trade Organisation's Sanitary and Phytosanitary Agreement, and we actively contribute to and adopt robust science-based standards developed by the international Codex Alimentarius Commission. These actions help to support trade by showing to the world that we are a fair and principled trading nation, and by building relations between multiple countries to create closer ties.

Supporting better outcomes for Māori

We are aware of our role in supporting outcomes for Māori. There is an obligation for New Zealand Food Safety to ensure there are mechanisms for Māori to participate in the food safety system and to recognise and provide for perspectives and values that pertain to Māori.

GUIDING PRINCIPLES

These guiding principles describe how we will operate

To achieve our outcomes, what we do is important, but so is how we do it. It is important that we are clear to everyone about the principles we follow. We are always learning, and continually finding ways to improve.

Our guiding principles are:

- We put consumers first in everything we do
- We listen to people's interests and concerns. We find ways to engage effectively and respond in a timely and respectful manner. We value the people we work with and for
- We are fair and proportionate in our interactions with industry. We set the right rules at the right level. When those rules are broken, our response is based on the level of risk to consumers, and the intention of those involved
- We are outcome driven. We care about the result, we are flexible about how we get there
- We make evidence-based decisions. We invest in science, social science and research, data and evidence. Consumers, industry and overseas governments hold us in high regard because we base our decisions on the best information available
- We are transparent and open. We give honest answers to people, acknowledge uncertainties and inform people about risks
- We build the capability of our people. It is important to attract, train and retain skilled and passionate staff members, as our people are the key to our success
- We work with others to get the job done. We find ways to partner with other New Zealand government agencies and food safety regulators from abroad to achieve the outcomes that matter.

Together these principles will enable us to work with everyone in the food safety system, to benefit all New Zealanders.





PART 2

THE FOOD SAFETY SYSTEM AND OUR ROLE IN IT



Image source: <https://www.nzstory.com>

THE FOOD PROCESS FOR CONSUMERS FROM PRODUCERS

The food process refers to all the steps required to get food from the producer to the consumer.

THE FOOD PROCESS



Image source: New Zealand Food Safety

The processes required to get food to the consumer from the producer can be surprisingly complex. Trade is an integral part of this process, as New Zealand now has over \$5 billion of food imports each year, and also exports 80 percent of the food we produce.³

Below is a summary of the key steps in the food process:

1. **Inputs** – inputs used to start the food process include natural resources like land, water, seeds, plus, breeding stocks and synthetic inputs like fertiliser.
2. **Planting, breeding and growing** – this happens until plants are ready to be harvested, or stock animals and seafood are mature enough.
3. **Harvesting and slaughtering** – mature crops are harvested on farms or on site. Animals are slaughtered at meat processing factories.
4. **Primary processing** – raw plant and animal products may undergo primary processing, where they are converted to edible food commodities or ingredients.
5. **Secondary processing** – primary products may undergo secondary processing, where they are developed into ready-to-eat foods. Food products are then packaged and labelled. Sometimes, the ingredients for secondary processing are imported.
6. **Distribution and storage** – food products are distributed to national and international wholesalers, and then on to retailers. During distribution, products may be kept in temperature-controlled storage facilities. This can include imported foods to sell to New Zealanders.
7. **Sale** – food is then sold to retailers like supermarkets, or to the food service sector, which includes those who sell food (like restaurants and cafes) and those who serve food without a fee (like hospitals and marae).
8. **Serving** – food is prepared and served. This can be in places that are public and regulated, like restaurants, or places that are private and unregulated, like people's homes.

OUR KEY PARTNERS IN THE FOOD SAFETY SYSTEM

The food safety system has many different people, businesses, organisations and government agencies contributing through the process.

Consumers

New Zealand consumers who buy, prepare and eat food are a vital part of the food safety system. Everyone expects food to be safe and to be what it says it is. Consumers deserve to have clear and accurate information about food, so they can make informed choices.

As New Zealand's food safety regulator, it is of utmost importance to us that consumers can have confidence in their food and their ability to make informed choices. This includes 4.9 million New Zealand consumers, the 2-3 million tourists who visit Aotearoa each year, and the millions of people around the world who consume food from New Zealand.¹³

Consumers play an active role in food safety, as how they handle and prepare food makes a big difference to the safety of the final product. Consumers also make choices about what food to eat and they play a key role in telling us what information they need so they can make an informed choice.

The food industry

This includes any organisation that produces, processes, handles or sells food or ingredients, at any point from when food production begins to when it is eaten by the consumer.

It includes:

- food importers and exporters;
- growers and farmers;
- manufacturers and packers;
- storage and transport companies;
- wholesalers and retailers;
- anyone offering food for sale;
- restaurant owners and caterers;
- organisations that serve food without charging for it – like hospitals and marae.

All of these participants are responsible for the safety of the food they produce.

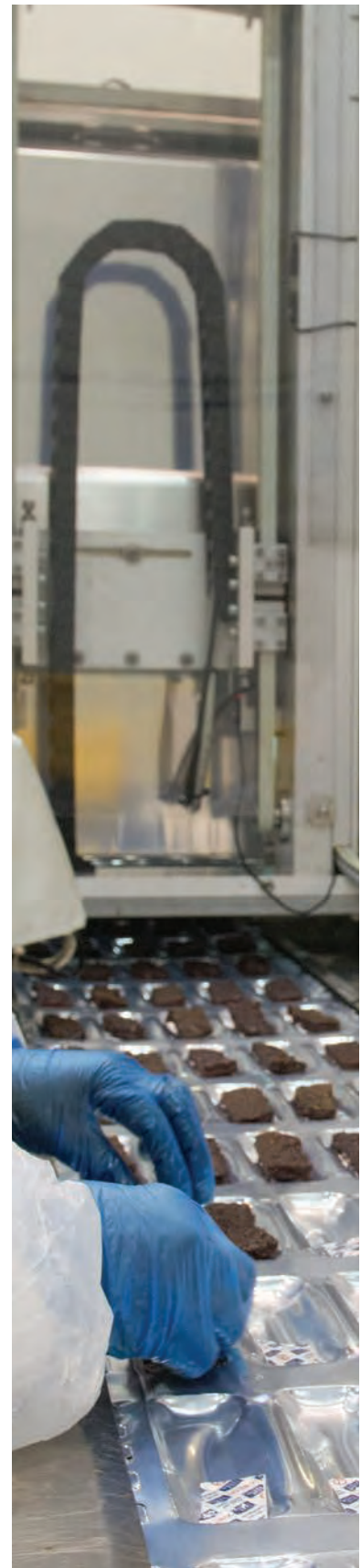
They are required to identify food safety risks and ensure that those risks are well managed. They also need to ensure they follow the rules in terms of how food is produced, stored, transported, packaged, labelled, imported, exported, prepared and sold.

Industry is supported by rules that are rational and evidence-based, clearly and effectively communicated, and applied in a way that is practical for them to comply.

Regulators and verifiers

New Zealand Food Safety regulates the New Zealand food safety system. We set the rules for how food is grown, processed and sold, to make sure it is safe and suitable for people to eat. We monitor whether the rules are followed and we enforce them when they are broken. We explain this regulatory role in more detail on page 25.

Local councils play a key role in the domestic food safety system. They act as co-regulators with New Zealand Food Safety under the Food Act by providing



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Facilitating international food trade

The World Trade Organisation's Agreement on the Application of Sanitary and Phytosanitary Measures is designed to reduce barriers to trade while allowing effective controls to protect our citizens and environment. Participating countries are encouraged to adopt international food safety standards when these exist, and they are required to act fairly when setting any unique, national food safety standards. These standards must be in place to protect the health of local people, animals or plants – rather than serving as a trade barrier that protects the interests of local producers. Finally, countries are required to treat trading partners in a comparable way when those partners have comparable food safety standards – rather than discriminating between countries in an arbitrary way.

permission for local food businesses to operate, and by enforcing the rules when necessary. Councils also act as verifiers by monitoring whether the rules are followed.

Finally, there are a number of private companies that also provide verification and laboratory services. They monitor whether industry has the right systems and processes to minimise food safety risks.

Overseas governments

Overseas governments are a key player in the New Zealand food safety system because New Zealand exports about 80 percent of its food.³ One foundation of our export success is that our food safety system gives our trading partners confidence that New Zealand food is safe and can be trusted.

Overseas governments protect their domestic consumers by setting food standards and overseeing which food crosses the border. The Ministry for Primary Industries works closely with our trading partners to enable the best possible access for New Zealand products to overseas markets. Wherever possible, we collaborate with other countries to develop shared international standards, and this makes it much easier to trade safe and suitable food. Together, governments (including New Zealand) set the international food rules, such as the World Trade Organisation's Agreement on the Application of Sanitary and Phytosanitary Measures, the Codex Alimentarius Commission run by the Food and Agriculture Organisation and the World Health Organisation.

Māori

As tangata whenua and Treaty partners, Māori have a key role in the food safety system and there is a growing realisation that what benefits Māori also benefits wider Aotearoa.

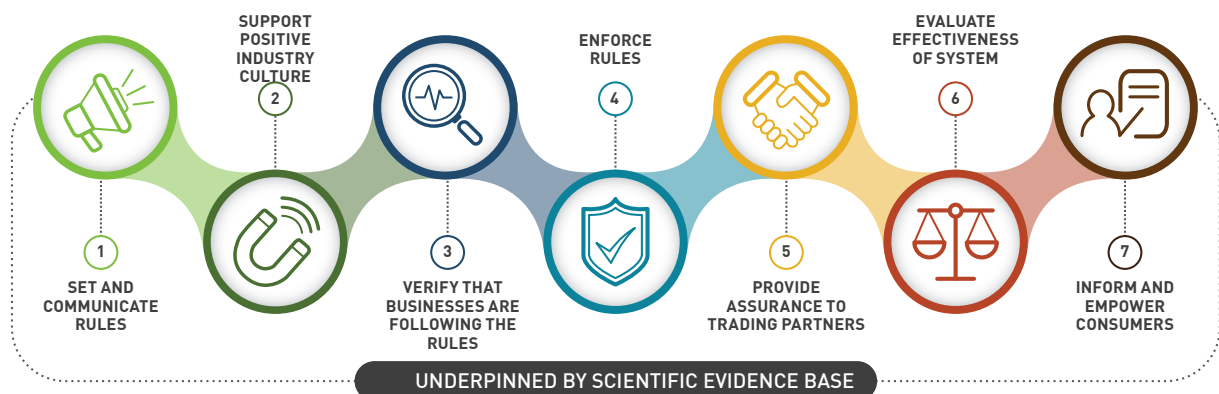
Their involvement in compliance standards, food handling and hospitality is a key part of their business strategy. For example, as te Iwi Māori settle with the Crown, there is a resurgence on refurbishing their marae facilities. For many marae whanau, hapū and iwi this is a huge undertaking for business purposes. Value systems like manaakitanga (showing care for others), whanaungatanga (kinship) and tikanga (protocols) ensure cultural and socio-economic development for the prosperity for future generations.



OUR ROLE IN THE FOOD SAFETY SYSTEM

Regulation of the food safety system is critical to protecting the health and wellbeing of consumers here and overseas, and to guarding the reputation of New Zealand food.

OUR FUNCTIONS ACROSS THE FOOD PROCESS



We play a number of roles in the food safety system:

1. We set the rules and support others to understand them.
2. We support positive industry culture.
3. We verify that businesses are following the rules.
4. We enforce rules and standards
5. We provide assurance to trading partners.
6. We monitor and evaluate the effectiveness of the system
7. We inform and empower consumers.

Our functions are underpinned by a scientific evidence-base.

We use science to detect and measure risks in the food chain and to identify the best ways to minimise those risks. With scientific evidence as our foundation we then develop rules and standards for industry to follow. This approach provides confidence to consumers, overseas governments and industry that our rules are evidence-based and not arbitrary. We also use science to identify the risks that are coming on the horizon and to develop appropriate responses to those risks.

1. We set and communicate the rules

We set, or contribute to setting, rules for the New Zealand food industry, covering the entire food process from the producer to the consumer. The key rules that govern our food system including imported food are set out in four Acts of Parliament: the Food Act, the Animal Products Act, the Wine Act, and the Agricultural Compounds and Veterinary Medicines Act.

The rules specify:

- what substances can be used in food production, such as fertilisers and animal medicines;
- processes that must be followed when food is produced;
- processes that need to be followed when food is imported;
- the necessary composition of food
- how food must be labelled, transported, sold and prepared;
- what records must be kept to prove that food safety risks have been well managed and that all the rules have been followed.

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Developing international rules and standards

We work with other nations to develop shared international standards, through forums such as the Codex Alimentarius Commission. The goals of the 190+ member countries is that food traded internationally is safe for everyone, that consumer health is protected, and that fair practices in food trade are promoted. On a practical level, the Commission researches and develops international food standards, guidelines, and codes of practice for national governments to follow.

New Zealand is currently leading the review of a Codex Standard for Follow-up Formula relating to infant formula, to specify how this product should be constituted and labelled, and to ensure the standard is science based.

We set the rules by first engaging with subject matter experts and reviewing the scientific evidence. Next we consult with industry members and the public, to develop and test options. We assess the pros and cons of imposing any new rule or requirement, to ensure that we are maximising benefits and minimising costs. Finally, we recommend a way forward by providing advice to Ministers and decision makers.

We communicate these rules and standards to industry and actively engage with them to ensure they understand and are able to follow the rules. We use various approaches to do this. We run information meetings and workshops with industry members, to explain the requirements that we have set out. We also develop written guidelines, templates and other tools to make it easier for industry to implement change, and we share these resources via our website, social media channels, and by actively liaising with industry groups and individual stakeholders.

Trans-Tasman food standards

Beyond New Zealand, we develop some food standards in partnership with other countries in order to facilitate trade, and improve food safety and suitability around the world.

The New Zealand Government and the Government of Australia have an agreement to operate a Joint Food Standards System (the Food Treaty). The Treaty commits both countries to the development of joint food standards. The joint system (and trade in food between the two countries) is enhanced by the Trans-Tasman Mutual Recognition Arrangement, which states that goods that may be legally sold in New Zealand may be sold in Australia, and vice versa.

Food Standards Australia New Zealand (FSANZ) is the Trans-Tasman agency that develops and reviews standards on the composition and labelling of food sold in New Zealand and Australia. New Zealand is involved in the standard setting process and the food system governance activities, and New Zealand Food Safety is responsible for interpreting, implementing and enforcing these standards in New Zealand.

The joint food regulatory system aims to protect consumer health and support trade and growth opportunities.

2. We support positive industry culture

We promote a positive food safety culture by highlighting the importance of good food safety practices and the systems that underpin this, and how we all benefit when food safety is prioritised.

One of the ways we build a positive food safety culture is by empowering industry to find ways of producing safe food and complying with the rules in a way that works for them. In practice this means that we make it clear to industry what food safety results they need to achieve, and then we ask them to show how they will comply. This flexible approach helps to build a positive food safety culture, because food businesses more actively consider the safety results they are trying to achieve, and the best way to manage their unique risks, given their unique circumstances.

For exporters, the Exporter Regulatory Advice Service provides support by making it easier to understand our requirements to export. The service provides advice that is tailored to the exporters' requirements and in five years has helped close to 2500 exporters. The team listens to and works with exporters to

identify common issues or areas they need support on and develops new ways to make exporting information easier to find, navigate and understand.

3. We verify that businesses are following the rules

We ensure that everyone complies with the rules. Verifiers (such as local councils and commercial verifiers) checking that industry are doing what they should, and have methods and systems in place to minimise food safety risks. It is then our job to 'check the checkers'.

It is each business owner's responsibility to produce products that are safe and fit for purpose. They need to ensure they are monitoring their operation so it is complying with the rules. Our role is then to verify that food businesses are following their agreed risk mitigation programmes to ensure everyone's safety. For example, we send our verifiers to check the quality of production at meat plants.

To perform this role, we first ensure that verifiers and their staff have the skills and competencies they need to carry out their duties. We then review their systems and procedures to ensure they meet expectations, and we perform system based assessments, to identify any inconsistencies in approach.

We also follow up on complaints from New Zealanders. Over the last five years (2014-2018) we have conducted 2,078 food complaint investigations.

4. We provide assurance to trading partners

We provide assurances to our trading partners that New Zealand food complies with the required standards, which helps New Zealand products access those markets. The trust other countries have in our food safety system and our assurances has developed over time.

At the system level, our food safety standards are based on international Codex principles and guidelines. This provides trading partners assurance that our standards are evidence-based. We work with other countries so that they are able to audit our food safety system and understand how our systems comply with Codex requirements. We have on average at least one audit each month, and these audits reassure overseas governments the New Zealand food safety system is robust and continues to be world-class.

Research into food safety culture

We recently partnered with the Food Safety Assurance and Advisory Council, which provides independent advice to New Zealand Food Safety on issues relating to food safety. The research looked into food safety culture in New Zealand businesses, to understand the issues and opportunities. When asked what the main factor is in driving food safety commitment in their organisation, respondents most often said – customer safety, product quality and staying in business. Results like this highlight how fundamental food safety and trust are, both for consumer wellbeing and also for business health.



When it comes to specific exports heading offshore, we provide another level of assurance. We provide transparency with an established register of businesses who export from New Zealand. We also set specific rules, where required, for access into markets and provide robust checks to ensure consignments leaving our shores meet the relevant requirements. If required, this checking process can involve providing a formal 'assurance' to overseas governments. In 2018 we issued over 219,000 formal assurances (in the form of export certificates) for animal products (such as dairy products, meat, seafood and honey). We also provide around 18,000 formal assurances per year for wine and many other assurances for organic foods, and horticultural produce.

5. We set rules for importing food

The amount of food New Zealand imports annually has risen over the past 20 years, from \$1.8 billion in 1999 to \$5.6 billion in 2019.³ The range of foods we import has also changed. While ingredients such as grains are still a large proportion of the food we import, the variety has also expanded, mirroring changes in New Zealand's population and increasing cultural diversity. The increasing globalisation of food production has also changed the type of foods we import and how it is used.

Businesses that import food are responsible for making sure the food is safe and suitable. Every importer must register with us and some also need to be verified, depending on the food they import. Every importer must know what is in their food, how to store and transport it safely, as well as who they bought it from and sold it to.

We also have Food Safety Officers who check imported food at the border if it is classified, based on scientific evidence, as being particularly high risk. These higher risk foods need to meet New Zealand's requirements before they can clear our border, and there needs to be evidence they do, for example with an official certificate or by passing a laboratory test in New Zealand. We also carry out periodic tests to verify the exporting country's system remains compliant with what was agreed with them.

6. We enforce the rules

When the rules have been broken, or unsafe food is being sold, it is our job to investigate and to fix the situation so that consumers are kept safe.

The way we respond depends on the level of risk created for consumers and the intent of those involved, and there are a range of enforcement tools that we can use. We may withdraw a product from sale, give an instant fine, require food businesses to change their food-related processes, temporarily or permanently shut down a business or food provider, or press criminal charges through the courts.

Withdrawing a product from sale generally means carrying out a food recall. We regularly work with businesses when things go wrong, to make sure that food does not reach consumers if it is not safe or suitable. In 2018 we carried out 130 food recalls.¹⁴ There are many reasons why a food recall might be required. Two examples are the possibility that there might be a foreign object, such as plastic, in food or, that there may be unlabelled ingredients that could cause an allergic reaction.

Another element of our role is managing food-related emergencies. This includes preparing for, investigating and responding to food-related incidents, complaints or emergencies. The Ministry for Primary Industries uses

New Zealand's Coordinated Incident Management System (CIMS) to manage critical food safety events or food safety responses, and also runs simulations as part of training for staff involved in responses. We ensure that consumers are aware of the food safety rules and how they have been breached, and we help to ensure the unsafe food product is removed from the shelves.

7. We monitor and evaluate the effectiveness of the system

We monitor and evaluate the effectiveness of the food safety system by conducting regulation and performance reviews.

In regulation reviews, we evaluate the effectiveness of the rules that we have set. We want to check the rules are easy to understand and consistent, and that they encourage industry members to comply – without getting in the way of innovation.

In our performance reviews, we gather key high-level metrics, such as the rate of foodborne illness for the year, the level of industry non-compliance, and the level of confidence that consumers have in our ability to keep food safe. We use this information to see what is working well, and where we need to focus more of our efforts.

Our monitoring also includes carrying out multiple national monitoring programmes to verify that hazards and contaminants are kept at an acceptable level for public health. This includes approximately 500,000 laboratory tests each year to check the food safety system is working. In addition, industry also carry out testing.

8. We inform and empower consumers

We engage in a number of activities to inform and empower consumers, so they can keep themselves safe, and make healthy and informed choices. Here are a number of examples of our work:

- We run consumer-facing engagement campaigns to promote good food handling practices, because approximately 100,000 cases of food poisoning happen in the home each year.¹⁵
- We have agreed a policy with Australia under the Joint Food Regulation System to have warning labels on alcohol advising pregnant women not to drink, and are working with Food Standards Australia New Zealand to develop the standards.
- We helped develop and implement the voluntary trans-Tasman Health Star Rating scheme in New Zealand, which makes it easier for people to choose healthier food options.
- We require key information to be displayed on a Nutrition Information Panel on food labels. These panels must include the amount of energy per serving, along with the key nutrients – protein, total fat, saturated fat, carbohydrate, sugars, and sodium.

Case Study: New Zealand Total Diet Study

New Zealand Food Safety carries out multiple national monitoring programmes to verify that hazards and contaminants are not present or kept at an acceptable level for public health.

The New Zealand Total Diet Study is part of our monitoring and testing programme. The study surveys a range of common foods consumed in a typical diet across different groups of New Zealanders. The purpose is to assess exposure to chemical residues, contaminant elements and selected nutrients, from representative foods.

We undertake the study every five years, and most recently completed it in 2016. We use the information we get from the study to inform our development and review of New Zealand food standards to ensure New Zealand food continues to be safe.



PART 3

THE CHANGING CONTEXT

Around the world, significant changes are occurring right across the food safety system from producer to consumer, and many of these changes are happening at speed.

There are emerging pressures on the production side, from climate change and population growth, supply chains that are becoming more globalised and complex, and increasingly sophisticated food fraud that devalues a brand and creates risk. Yet there are also positive developments, with technology and innovation enabling food to be produced and processed in new and potentially safer ways, and with advances in hazard detection and risk prevention.

There are changes on the consumption side, with people taking an increasing interest in the food they eat, and wanting to know more about its origins, along with the environmental, social and health impacts of food production and consumption. People are increasingly concerned about some health risks, such as food allergies, while food-related



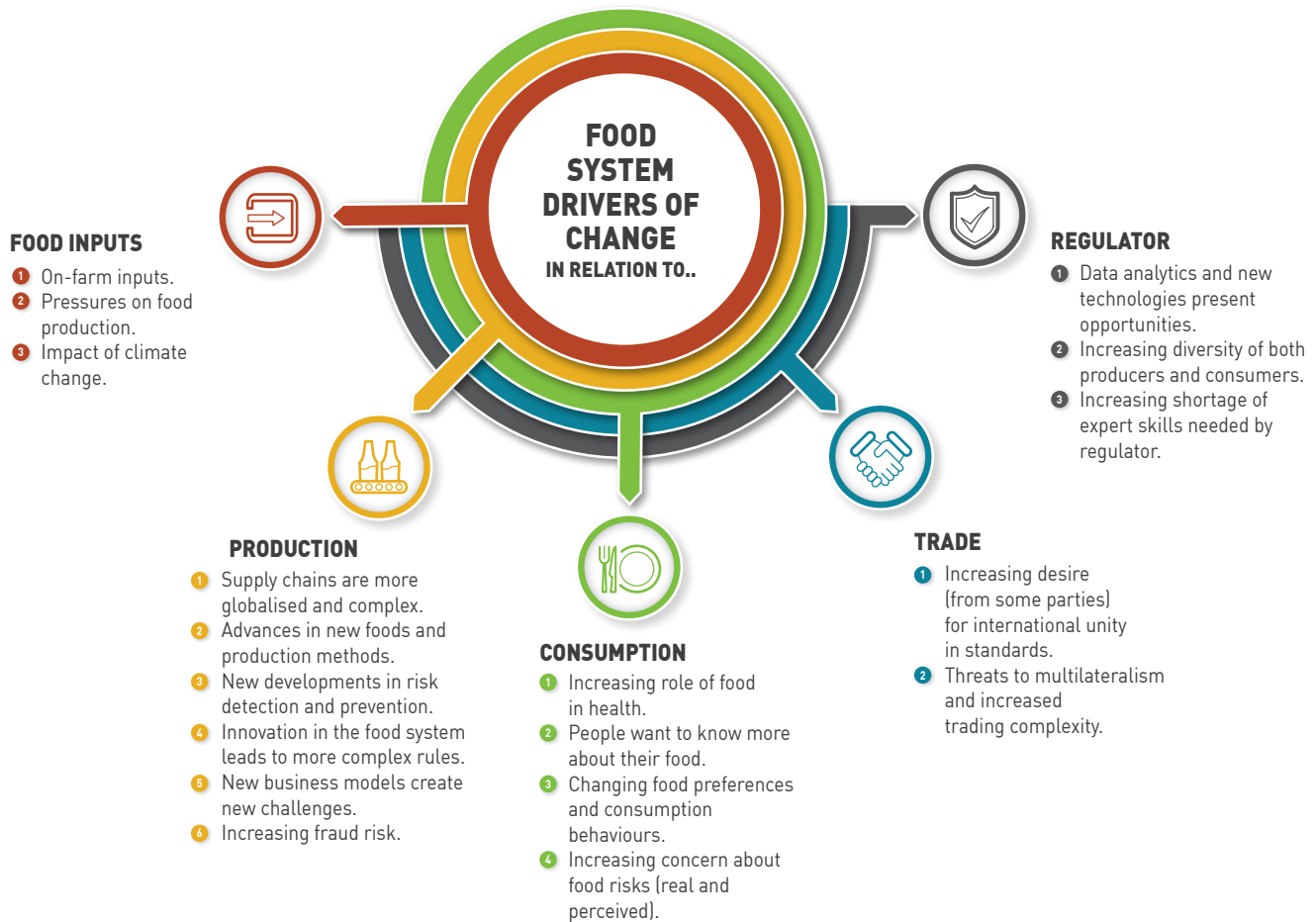
Image source: By Monika Grabkowska on Unsplash

health conditions such as obesity, diabetes and heart disease continue an upward trajectory.⁶ The increasing diversity of New Zealand's population, and our more globalised tastes are driving people to consume new foods in new ways. This presents both opportunities and challenges.

When it comes to trade in food, we are seeing greater focus by regulators on consumer expectations, strengthening of food safety regimes, particularly in developing countries, and an increased complexity in the global food supply chain. Finally, as the regulator, we are facing exciting opportunities from data analytics and technology, alongside an increasing need for specific skills, and competition for these skills.

DRIVERS OF CHANGE: SUMMARY

The following diagram summarises the drivers of change that are affecting the food safety system.



FOOD INPUTS

Pressures on food production

There are pressures from our population, land, water and soil that will lead people to produce food differently in the future. One challenge is the growing New Zealand population and the geographic expansion of cities – which may mean less land is available for growing crops and raising livestock. The Ministry for the Environment notes that there was a 10 percent increase in land used for urban development between 1996 and 2012, and a 7 percent reduction in land used for agricultural production between 2002 and 2012.¹⁶ Another challenge is that intensive farming methods can affect the fertility of the land, as land cleared for farming is more vulnerable to soil erosion, and certain farm management practices can compact the soil which may affect its fertility.¹⁷

Impact of climate change

We need to respond to the impacts of climate change, to future-proof New Zealand's food production methods and to continue to protect consumers from food safety risks. Experts predict that temperatures in New Zealand will increase by 0.7 to 1.0 degree Celsius by 2040, and by up to 3.0 degrees by 2090.¹⁸ As the temperature rises on land and in the sea, and floods and droughts become more common, we are likely to see an increased impetus to produce food in different ways, or a push to produce different kinds of food.¹⁹

Climate change will also create new food safety risks:

- Naturally occurring harmful bacteria and viruses may be transmitted at a faster rate, and we may see different organisms that spread disease surviving and thriving where they did not previously.²⁰
- If pesticides and antimicrobials are used more frequently, there is a risk of food contamination from chemical residues.²¹
- The combination of higher temperatures and increased humidity may also mean different moulds grow and thrive on staple crops. Some of these are toxic if eaten.²¹
- Food is likely to spoil faster in a warmer climate, requiring greater vigilance from producers and consumers.²¹
- There may be more frequent algal blooms that make shellfish toxic and inedible for humans.²²

Māori are vulnerable when it comes to climate change, and one area of concern is mātauranga Māori sanctity of kai. For example, kaimoana has always been important for Māori.²³ We are now aware that any food gathering sites in low lying coastal areas are at risk of being lost due to inundation and sea erosion (for example, pipi).²³

On-farm inputs

On-farm inputs such as seeds, fertilisers and vet medicines are a key part of food production, and technological advancements are leading to new and better on-farm inputs. For example, a shift to low-toxicity pesticides and UV light is becoming commonplace to control pests.²⁴ Ensuring regulation remains flexible enough to adapt to new technology also brings challenges.

We also face potentially serious challenges, such as the risk of antimicrobial resistance among stock animals. Antimicrobial resistance develops when microbes (e.g. bacteria, viruses or fungi) no longer respond to a drug that previously treated them effectively. New Zealand's use of antimicrobials in food production is relatively low compared to some other developed nations, and there is no evidence to date that the use of antibiotics in stock food is leading to antimicrobial resistance. But we need to be vigilant, and this is why we work with the Ministry of Health to implement our Antimicrobial Resistance Action Plan. Having a plan is important because research from other nations indicates the use of antimicrobials in the dairy industry can contribute to the development of disease-resistant bacteria strains, and we need to work to ensure disease-resistant strains will not transmit from our dairy cattle to our people.²⁵

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Supply chains are more globalised and complex

We are living in an increasingly globalised world. This makes it more challenging to trace food back to its origins – and this is something that consumers are increasingly interested in. In terms of the numbers, nearly 20 percent of all food produced in the world crosses an international border, and the value of food imports into New Zealand has increased more than 700 percent in less than 25 years, from US \$643 million in 1990 to US \$4,629 million in 2014.⁷

A single food product might be composed of both local and imported ingredients manufactured by a raft of different firms. With every step in the food supply chain, the risk of fraud or unintentional contamination increases.

The problem is such that a leading food safety publication says it “believe[s] that the one overriding food industry concern is how to best manage food safety across the global supply chain while ensuring regulatory compliance.”

Advances in new foods and production methods

Technological advances are allowing the food industry to develop new production methods and new foods. Our challenge is to move fast enough to allow for innovation, while always keeping consumers safe.

Alternative proteins provide a useful case study. Alternative proteins include lab-grown meat and plant-based proteins that have the taste and texture of meat. On the one hand, alternative proteins could significantly reduce food safety risks because these products can be manufactured in more sterile environments, without potential contamination from animal faeces or bacteria from livestock.²⁶ On the other hand alternative proteins could generate new and unforeseen risks that we will need to be aware of and respond to.

New developments in risk detection and prevention

New technologies are enabling us to detect harmful bacteria and viruses, and chemicals more effectively, and prevent problems occurring in the first place. We need to stay aware of the latest developments, and evaluate and adopt these technologies if they help us regulate the system more effectively.

Nanotechnology is one promising area of risk prevention. Antibacterial nanoparticles may be able to be used as a food ingredient or in packaging, to minimise bacteria levels.²⁷ Whole genome sequencing is another key technology that is becoming more integrated into foodborne risk detection and outbreak management. For example, since 2013, the US food regulator has whole genome sequenced all *Listeria monocytogenes* strains sourced from food, food processing environments and patients. This approach has allowed more outbreaks to be detected and resolved, often at an earlier stage of the outbreak.²⁸

The challenge with these kinds of technologies is getting the balance right. We can and should make use of technology to improve the safety of food. But we also need to be mindful that ever-more sensitive tests may detect organisms and substances that have always been there. Finding them does not mean they pose a real threat to public safety but we do need to consider what those findings mean, and we need to ensure we communicate our concerns carefully and proportionately.

Innovation in the food system leads to more complex rules

As food products and food production become more complex, we often need to develop complex rules to make sure our food continues to be safe and suitable. This is a challenge for us, as we need our food regulations to be straightforward for industry to follow, proportionate to the level of risk, flexible to allow for ongoing innovation, and robust to protect consumers.

Of course, the way that industry ‘experiences’ our rules depends on various factors, including the size of their organisation and their particular product focus. In stakeholder research, we have heard that some small food retailers have found it challenging to comply with the Food Act, and that compliance is also more difficult for businesses that operate under more than one Act. To help these businesses comply, we continue to develop easy to follow guidance that has benefited 16,000 businesses.

New business models create new challenges

New business models are being developed all the time, creating new modes of interaction for industry and consumers, and new requirements about what and how we regulate, in order to keep people safe.

One challenge comes from e-commerce. E-commerce has also enabled consumers to make direct purchases from businesses, often in small quantities (such as two bottles of wine or three jars of honey). This has resulted in a surge of food products being traded direct to overseas consumers, which raises concerns of businesses avoiding food safety rules, especially export requirements.

Grocery e-commerce will rank as the fastest-growing product category online and result in revenue surpassing \$19 billion by the end of 2019.²⁹ Another development is the rise of app-based platform businesses that deliver restaurant food to people’s homes via taxi. With this new step in fast food delivery, the vehicle driver is not formally associated with the restaurant – and so the lines of responsibility for food safety are not as clear.

Increasing fraud risk

“Food fraud” refers to instances when a food product is deliberately altered or misrepresented in order to generate a financial gain. We must continue to address this problem in order to protect consumers, to support honest New Zealand businesses to grow, and to ensure our food safety system remains highly regarded. Fraudulent activity not only damages brands, but also people’s broader perception of a country’s food safety system, as noted in the wake of the European scandal in which horse meat was sold as mincemeat.³⁰

Estimates suggest that food fraud currently affects about 10 percent of all food that is sold commercially.³¹ This figure is likely to grow over time, as sophisticated new technologies enable new methods of fraud.³² The risk of fraud is also higher for premium foods, where the financial incentive for fraud is high and brand advantage can be quickly eroded. If we want to be in the premium food market, this will be a particular issue for New Zealand.

On the up side, the detection of fraud is becoming more sophisticated. Food “fingerprinting” technologies can rapidly identify if a food has been doctored and private sector companies have begun to invest in technologies like this, to give consumers certainty that what they are eating or drinking is the real deal.³³

Image source: Monika Grabkowska via Unsplash

Case study: the science behind health claims

We use science to help consumers make more informed choices. One way we do this is by evaluating evidence behind health claims on food labels. Our Trans-Tasman food standards allow a range of pre-approved claims for well-established evidence such as; 'contains calcium for bone health' or 'contains vitamin C for immune system function'. It also allows for self-substantiation of claims by manufacturers if they have sufficient evidence, encouraging innovation. For instance, a large New Zealand kiwifruit producer wanted to make the claim that green kiwifruit is good for bowel function. The producer invested in high quality research which added to the available scientific evidence. We then assessed the resulting evidence, to ensure it was sound and met our regulatory requirements. This now-substantiated health claim helps to educate consumers about the helpful role of kiwifruit in the diet, potentially attracting more consumers, and a higher price for the product, while helping the kiwifruit producer gain access to a larger number of international markets.

CONSUMPTION

The increasing importance of food in health

Food plays an increasingly important role in health – we need to support consumers to make informed choices about what they eat. Around the world there is an increased prevalence of lifestyle-related illness, in which nutrition plays a part. This includes increases in rates of obesity and type 2 diabetes, and, in New Zealand more specifically, high rates of heart disease and bowel cancer. In terms of the data:

- Diets high in saturated fat and salt are linked to cardiovascular disease, which is the leading cause of death in New Zealand, and responsible for 30 percent of all deaths.^{34 35 36}
- Dietary choices play a role in the development of obesity and type 2 diabetes. In New Zealand, nearly one-third of all adults are obese.⁶ We also have one of the highest rates of type 2 diabetes in the world.³⁷

There are also counter-trends, including the rise of health-conscious consumers, and the “food as medicine” movement, in which nutritionists and doctors prescribe certain diets to address conditions like type 2 diabetes.³⁸

Consumers want to know more about their food

Modern consumers want more information about their food. In fact “consumer demand for more information about the food they consume ... has been identified as one of the most important “megatrends” that the food industry needs to grapple with to succeed”, according to Australia’s Commonwealth Scientific and Industrial Research Organisation.³⁹

Traditionally, consumers have decided which foods to buy based on taste, price and convenience. But the modern “consumer value equation” potentially goes much further, covering: health and wellness – for instance whether a food is nutritious, and natural rather than artificial; safety – particularly around the absence of allergens, or accurate labelling of allergens; social impact – which includes sustainability, animal welfare, fair treatment of workers, and local sourcing of foods; and experience – which relates more to the purchasing and customer experience provided by the private sector.⁴⁰

The overarching theme is transparency. Consumers want to understand the origins and impacts of their food, and they want certainty the food they are eating can be trusted. These trends matter for consumers but also for New Zealand producers, who will be able to achieve product premiums if they are able to provide the information – and peace of mind – that consumers want.

Consumers’ changing food preferences and consumption behaviours

The way that people buy and consume food is changing and businesses now need to provide for the increased variety of consumer behaviour and preferences. We need to respond promptly to these changes in order to keep consumers safe, while also allowing for change and innovation.

We are seeing increased demand for:

- Imported food, driven by the increasing diversity of the New Zealand population, our more globalised tastes, and the effect of e-commerce in facilitating trade. Food imports totalled \$5.6 billion for the year to June 2018.³

- Convenience food, in part driven by busy modern lifestyles. Over time, purchase data shows people are consuming more ready-to-eat meals, and meals out, and spending less on grocery foods.⁴¹

Consumers increasing concern about food risks

Consumers are increasingly concerned about some specific food risks, for example issues related to the consumption of gluten. We need to find ways to engage with consumers on these issues, regardless of whether their concerns are due to potential health risks or based on their personal experience or views.

It is challenging to quantify the issues, but some high-level statistics and trends paint a clear picture:

- Longitudinal data from New Zealand hospitals indicates that allergies are becoming more common.⁴² Anecdotal evidence also suggests that a growing number of people are developing an intolerance to certain foods or food components.⁴²
- In the US retail sales of gluten-free products more than doubled between 2011 and 2016.⁴³

It is also increasingly common for restaurants and cafés to have menus that specify which foods are nut free, gluten free or dairy free.



Image source: LuboMinarvia Unsplash

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Increasing desire – from some parties – for international unity in standards

In the intergovernmental space, the Codex Alimentarius Commission and the APEC Food Safety Cooperation Forum are two channels for supporting more unified standards. In the private sector, entities like the Global Food Safety Initiative are working to ensure that once a food is certified by one regulator or industry body, the certification is recognised everywhere.⁴⁴ Evidence suggests that implementing international standards has real benefits for producers – it supports new product development and market access, and it reduces waste and internal costs.⁴⁵

Threats to multilateralism and increased trading complexity

The international trading environment is becoming more complex, which presents challenges for our export producers. We are seeing new barriers to trade and an uncertain and volatile trading environment, as some countries become more protectionist and curb their levels of international trade. We need to be aware of the potential impact of these drivers of change on the multilateral trading forums New Zealand is a part of.⁴⁶

New Zealand's trade profile has also shifted towards Asia. For example, annual exports to China has significantly increased in the past 10 years.⁴⁷ As New Zealand producers export to relatively new markets, and to more markets than ever before, the rules and regulations around exporting become more numerous and challenging to navigate.



THE REGULATOR

Data analytics and new technologies present opportunities

Data analytics and new digital technologies can enable us to better understand of food safety risks, and how firms can manage them. Some promising developments are outlined below:

- Blockchain can be used by firms to keep definitive product records, which can be updated but never deleted. “As food safety and authenticity becomes more important for consumers and farmers alike, blockchain can be used to give people uncorrupted and authoritative records on exactly where their food has been and where it has come from.”⁴⁸
- Data from social media can be analysed to enable early detection of foodborne illness.⁴⁹
- The combination of Geographical Information Systems (GIS) data and attribute data (for example on location and weather conditions) can be used to predict food contamination risks.⁵⁰
- Sensors can be used to monitor, track and trace food as it is transported and stored.⁵¹

There is real value in New Zealand Food Safety working with industry in these areas, to ensure that we have access to timely and reliable data about food traceability and emerging food safety risks.

Increasing diversity of both producers and consumers

The increasing diversity of New Zealand society presents both opportunities and challenges for us, as we aim to build a more positive safety culture in the food industry, and influence consumer behaviour.

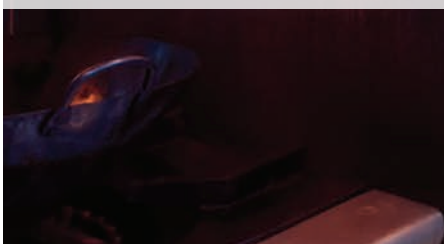
Effective communication is vital. Traditionally we have communicated in English or te reo Māori. However, the 2013 census showed that 18.6 percent of New Zealanders are multi-lingual, and more than 87,000 people do not speak English.⁵² In addition, in 2012 more than 25 percent of recent migrants worked in either food services, accommodation or retail.⁵³

Looking ahead, we will need to be mindful of who we are communicating with, and ensure our rules and resources for food businesses, and our advice for consumers, is user-friendly.

Increasing shortage of expert skills needed by the regulator

The demographics of our existing workforce are changing, and we must attract or have access to the talent in order to be an effective regulator. In terms of core skills, we are seeing a global shortage of food science and technology specialists.^{54 55 56}

For example, in New Zealand, food technologists and toxicologists are on the New Zealand Long Term Skill Shortage List developed by Immigration New Zealand, meaning there is a sustained and ongoing shortage of people with these skills.⁵⁷ New Zealand Food Safety will look for opportunities to work collaboratively with overseas regulators to solve joint problems.





PART 4

RESPONDING TO CHANGE

In response to the changes we are facing, we need to ensure our food safety system adapts. Our priorities have been heavily influenced by our desire to deliver for New Zealanders, because people need a food safety system that can meet their needs now, and into the future.

We have selected priority areas because they are the most essential for us to get right in the next five years, in order to deliver on our outcomes and ensure New Zealand food can be trusted by everyone, everywhere.

We are proposing to focus on four priority areas:

1. We will ensure New Zealand's world-class food safety system remains robust in responding to future challenges.
2. We will proactively support consumers to feel confident making choices about food.
3. We will lead new thinking in international forums to expand our international influence.
4. We will be an intelligence-led business that proactively prepares for the future.



Image source: Peter Young via NZStory.com

The proposed priorities do not cover everything that we will do. Rather, they highlight where we are proposing to focus our attention, effort and resources for the next five years. As a relatively small team with a large remit, it is essential we focus our resources on the highest value priorities.

To deliver on this strategy we will need to look different in the future with different skills and ways of working. We see real value in investing in people's development to ensure our people keep up-to-date with the latest science and technology.

We cannot achieve anything without our people. They are the key to our success and we must build the capability of our people in order to achieve our outcomes.

We describe our priorities in more detail, on the following pages.

We will ensure New Zealand's world-class food safety system remains robust in responding to future challenges

The way we grow, produce, buy and consume food is changing. A robust food safety system is key to navigating these changes while balancing innovation with safety.

Over the next five years, we will ensure our food safety system remains robust, by:

- engaging with industry to identify rules and requirements that are overly difficult to comply with, or that inhibit innovation, and look for ways to address these issues; without compromising safety
- building a clear picture of the performance of the food safety system and what influences it so we can measure our own performance and target our effort towards the areas that will have the greatest impact;
- actively providing examples of food safety best practice and work with industry to enhance a culture of shared learning;
- ensuring the co-regulatory model with councils and interfaces with other departments are working as well as they can for all involved.

We have a world-class food safety system, but it takes a lot of effort to make sure it stays that way. In the future it will require us to respond to changes on the horizon and to maintain a balance between enabling innovation while managing risks.

New Zealand consumers now have a lot more choice in what they eat, how it is produced, where it comes from, and how it is bought. These things can also bring new risks that, in our view, need to be well managed. It is essential that our food safety system remains robust, so we can navigate these challenges while still encouraging positive trends such as innovation and healthy fresh eating.

Rapid shifts in technology and science, as well as the development of new products and business practices are changing all aspects of food. Our food safety system needs to anticipate these developments. New Zealand Food Safety will continue to ensure all foods meet our food safety standards, and that our food standards reflect the changing environment.

New Zealand needs a food safety system that enables innovation and adaptation, and at the same time assures consumers, here and abroad, that New Zealand products and processes remain safe and high quality.

To achieve this we need everyone to understand and continue to comply with the rules. This may be more challenging in the future, particularly as some products are becoming higher value, which brings with it increased incentive for fraud, tampering or other criminal activities. We have a range of tools we can use to increase compliance and we will continue to ensure that New Zealand has the appropriate level of compliance activity.

We also need to determine how we can support responsible food businesses to prosper. Industry told us they want more tailored support to help navigate rules efficiently and we will work with them to achieve this. We will also work with industry to remove barriers to compliance and encourage and support them to share and implement best practice.

Examples from our proposed action plan

- Update templates and tools with a focus on helping smaller food businesses operate without the need for external assistance.
- Explore how New Zealand Food Safety can provide more support to operators entering the food industry as a new business in order to ensure compliance.
- Design a more cohesive and strategic approach to New Zealand's contribution to the Trans-Tasman food standards system
- Pilot food safety initiatives with commercial marae-based businesses to understand how New Zealand Food Safety can support their unique needs.

We will proactively support consumers to feel confident making choices about food

Our system works best when consumers are well informed about their various food choices.

Over the next five years we are proposing to do more to empower good choices about food, by:

- exploring user-friendly approaches for communicating information about what is in consumers' food to complement existing information on labels;
- ensuring consumers have access to factual and reliable information about food safety risks to enable them to make good decisions;
- ensuring there is a consumer-friendly digital presence for New Zealand Food Safety containing easy to understand information for consumers.

Consumers are more diverse than ever, and their food preferences are changing. In the face of increased choice and complexity, it is increasingly important that consumers have access to clear information and can trust it is accurate.

There is strong evidence to show that safe and nutritious food is a key part of healthy living, that poorly labelled, prepared or stored food can make people very sick in the short term, and that poor choices about what to eat, and in what quantity, can contribute to longer-term health issues.

Consumers can play an active role in keeping themselves healthy when choosing and consuming food. In our view, it is important that consumers can feel confident not only that the food they purchase is safe, but that they can prepare and consume it safely, and they are informed about the impact on their health of the food they choose to eat.

We can do more to help consumers feel well informed about their food. For example we will look to proactively provide advice to consumers to increase their understanding of food-related risks, and back this up with scientific evidence.

When engaging with consumers we heard that they wanted New Zealand Food Safety to take a broader view of their needs. Specifically consumers want more information about their food, for that information to be accurate and for it to be available to them in a way they can easily understand and engage with. Meeting these needs to the extent consumers' desire is much wider than New Zealand and give us the right information, based on strong evidence, to make decisions.



Examples from our proposed action plan:

- Engage more proactively with information about ad-hoc food safety consumer issues using channels that are likely to reach the target audience
- Leverage off opportunities with others to engage in public conversations about food safety.

We will lead new thinking in international forums to expand our international influence

The trading environment is shifting. Our role in proactively helping to shape this environment will be more important than ever.

Over the next five years, to ensure that New Zealand products reach more places more easily, we will focus on:

- promoting our science and regulatory expertise and building networks to support and enhance our international reputation;
- identifying ways New Zealand Food Safety can continue to actively participate in international food and science communities.

We have seen there are challenges and disruptions to the trade system, driven by changes in supply chains, new operating models and political changes around the world. There are also increasing challenges to food safety world-wide, and our trading partners are requesting more certainty and assurances that products are safe, authentic and suitable, often for reasons that we have not provided assurances for in the past.

Under these conditions, the international rules and principles that support and enable trade are more important than ever. New Zealand already has a well-established reputation for trading with integrity and providing confidence to our trading partners that our food exports are safe and meet agreed requirements. However, it has taken a significant amount of effort to build the successful reputation we have on the world food stage and it will take a lot more work to maintain this. We know the public is proud of New Zealand's international image and so we cannot afford to be passive, given the global challenges that we are facing.

We are proposing to do more to influence global standards and to maximise our nation's export potential. We will continue to advocate for fair rules-based trade at international forums and build further confidence of trading partners in the safety of our exports. We will work more effectively in international forums and continue to lead discussions on food safety issues. We will also continue to emphasise the importance of science based decision making in these forums.

We know that the safety of our imported food is also important to consumers and fair international standards have benefits for New Zealand both as exporters and importers.



Examples from our proposed action plan:

- Invest in robust and innovative assurance provisions, where required, to support trade across a range of products.
- Enhance use and acceptance of electronic certification systems.

We will be an intelligence-led business that proactively prepares for the future

Mā te tika o muri, ka tika a mua
It is only through the efforts of those who work out the back, will the front flourish.

Over the next five years, we will grow and develop our intelligence capability and become more proactive, by:

- establishing the technical capability and capacity to undertake long term horizon scanning;
- developing an approach to prioritise and plan our long term work based on insights from our horizon scanning;
- ensuring New Zealand Food Safety has access to the capability required to engage directly with consumers;
- building our capability to engage in a culturally appropriate way with Māori consumers and business owners.

This Whakatauki, used in a marae context, refers to the leaders speaking at the front being only as good as those working behind the scenes making sure everything is prepared and guests are well looked after. It reminds us that both jobs are equally important and without strong and capable workers behind the scenes our business unit wouldn't be as effective.

If we are going to deliver on our priorities we need to ensure we have the capability to do so.

We have seen that food safety systems around the world are facing a large number of challenges and changes. We want to be ready to respond to these challenges, and to seize opportunities in order to perform our role more effectively. To do this it is critical that we act proactively and have foresight of the emerging risks and opportunities.

Innovation and rapid shifts in technology are changing all aspects of food, from where food production starts, up until when it is eaten by the consumer. Most visibly, consumers have an increasingly broad and innovative selection of products and production methods to choose from. While these new foods and production methods can create huge opportunities for New Zealand producers and benefits for the consumer, the opportunities can also come with risks. We need to stay aware of these risks and be prepared to respond.

New technologies now help food safety regulators and private companies prevent food safety issues from occurring, detect bacteria outbreaks, and rapidly detect fraud. Yet these technologies also come with risks and uncertainties, and we need to decide which tools to use, when and how. Going forward we want to learn from other countries and seek out best practice to be more proactive.

To be an intelligence-led business insight on emerging consumer expectations and demands around food, and understanding the complexities within industry will be pivotal to success. This insight will help our people do their jobs more effectively and give us the right information, based on strong evidence, to make decisions.



Examples from our proposed action plan:

- Collaborate with other countries' food safety regulators, to gain insights on key technology-related risks and opportunities.
- Develop a channel strategy to effectively connect with consumers.

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New Zealand Food Safety
PO Box 2526, Wellington, 6140
New Zealand
0800 00 83 33
www.foodsafety.govt.nz

New Zealand Government

Ministry for Primary Industries
Manatū Ahu Matua

