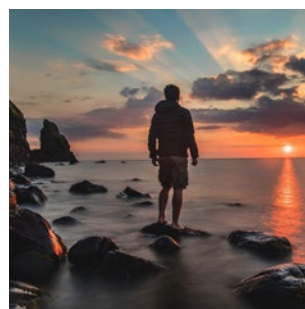
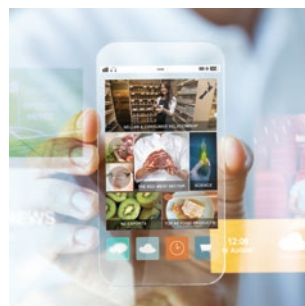
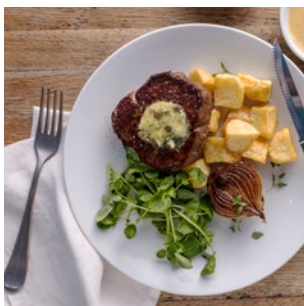


FIT FOR A BETTER WORLD

AOTEAROA
NEW ZEALAND

Agriculture, Food & Fibres Sector Vision and Strategic Direction Towards 2030



Time to seize the opportunity

This is the first time a vision has been developed for New Zealand's primary sector as a whole.

This presents a picture of what the future could look like for us.

This is about us as New Zealanders – who we are, what we do and how we do it.

It proposes a new pathway to prosperity for our country that is founded on the wellbeing of Te Taiao – the natural world – and on genuine and transformative partnerships. This can be our story and it is truly unique. It will bring sector confidence and social licence that will underpin future investment. It will help us be good ancestors.

The Vision and Strategy create a new space for us all to operate in. They will help us in our decision-making and practices and provide important signals for people we work with.

They will get us pulling in the same direction – whether we are on the land or water, doing research, in government or in the marketplace.

TAKING STOCK

To come up with this Vision and Strategy for our sector, we started by taking stock.

Globally there is legitimate concern about climate change and about the availability of land and water suitable for growing food. There's been a rise in awareness of food safety and food security. Alongside this, there's more trade protectionism. New technologies have emerged too, and notably there's been significant investment in plant-based proteins that mimic animal-derived ones.

Because of these factors, we believe there will be strong demand for naturally and ethically produced, nutritious and safe food and fibres – and we in New Zealand could meet this demand. There is opportunity for us if we transition fast enough.

We are better placed than many others. We have a temperate climate, good water availability, first-world education and science systems, low population density and the strength of our reputation for producing safe food.

The exciting prospect is that New Zealand's Agriculture, Food and Fibres Sector can be the solution. We can work to be the country of food and fibre producers who deliver wellbeing to people and the environment.

That ambition can help us build confidence as farmers, growers

and as a sector because we are doing the right thing, are respected and supported by the wider community and are rewarded in the marketplace.

But we need to be frank about where we are at now and the changes we have to make. We need to have honest conversations. We will have to be bold and determined. And we need to work together.

Some of the answers are at hand but not all of them. We must draw strength from working in genuine partnership with Māori and taking a holistic approach. We have enough understanding to start moving ahead with ambition, working with the best of our science and know-how to help us get to a new place.

It has been our privilege to undertake this work on behalf of our sector. We thank the hundreds of people from all parts of the agriculture, food and fibre industries and rural communities who sat in rooms and engaged with us as we progressed through the strategic analysis and arrived at this Vision and Strategy.

This is about celebrating our history and our roots as we stand together to embrace the challenges and opportunities of our future.

Primary Sector Council

**Taiao ora, Tangata ora.
If the natural world is healthy, so too are the people.**

Our Vision

— for the Agriculture, Food & Fibres Sector of Aotearoa New Zealand



THIS IS US

We are the farmers, growers, fishers, makers and crafters of Aotearoa New Zealand.

We aspire to an enriched future by providing the world's most discerning consumers with outstanding, ethically produced food, natural fibres, drinks, co- and bioproducts, all sourced from our land and oceans.



OUR REASON FOR BEING

We embrace the Māori concept of Te Taiao, a deep relationship of respect and reciprocity with the natural world. The health of the climate, land, water and living systems comes first. And when nature thrives so do our families, communities and businesses.



THIS IS OUR VISION

We are committed to meeting the greatest challenge humanity faces: rapidly moving to a low carbon emissions society, restoring the health of our water, reversing the decline in biodiversity and, at the same time, feeding our people.

We will own our part and lead the change that comes with it, starting now.

The principles of Te Taiao define our relationship with nature.

Alongside innovative science and technology, we are designing modern regenerative production systems fit for a better world.

Within a generation they will be the foundation of our prosperity and the way we produce high-quality, trusted and healthy food, drinks and fibres. These outstanding products will speak of our land, oceans and people. They will be enjoyed by people all over the world, fulfilling their desires for functionality, wellbeing and aesthetics.

Te Taiao, and the health and wellbeing of our communities and children for generations to come, will be the benchmark of how we measure success.

OUR VALUES

Integrity • Guardianship • Ingenuity • Respect

You can read more about the Vision, including the story of how it was developed, on the website: fitforabetterworld.org.nz

STRATEGIC

1 OUR APPROACH: VISION-LED, BUSINESS AND

TRANSITION PROCESS

2 ENABLERS

Establish Te Taiao framework (including regenerative farming systems, adoption programmes and pathways)

Align science, technology, education, training systems

Establish a 'Water for Life' leadership group

Develop ambitious pathways to carbon-neutrality

Build national-level environmental and workforce information systems

3 SUCCESS INDICATORS

Grow and develop billion-dollar NZ industries through category ownership and premium value chains

Up-take of tools and frameworks that support decision-making

Highly skilled and adaptable workforce

New Zealanders have access to healthy food

Trusted data on wellbeing of land, water, air, biodiversity, ecosystems

HERE'S THE PLAN:

Going from left to right, this Outline shows the main areas of work that will enable us to achieve the strategic outcomes of our Vision, by applying the principles of Te Taiao. There is to be a detailed work plan for each enabler. Critically, the success indicators are measurable.

TE TAIAO

OUTLINE

COMMUNITY-DRIVEN, GOVERNMENT-ENABLED

TRANSFORMATION PROCESS

4 CORE OUTCOMES

Achieve excellence in water management

Achieve substantial transition to carbon-neutrality within the next decade

Consumers and society connect with our values and products

Pan-sector economic growth between 2 to 5% per annum is maintained during our transition

5 STRATEGIC OUTCOMES

Healthy natural world and vibrant communities

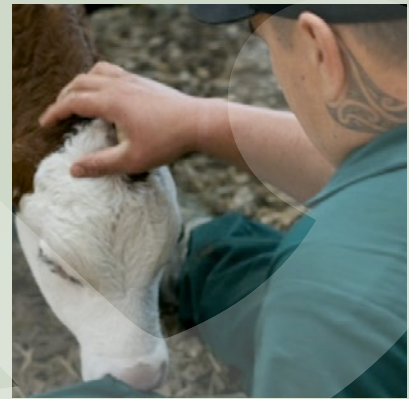
Global category leader for outstanding, ethically produced natural food, fibres and customised wellness, and provider of innovative services and technologies

FIT FOR A BETTER WORLD

Te Taiao

– Our way forward

Taiao ora, Tangata ora.
If the natural world is healthy, so too are the people.



Te Taiao puts the wellbeing of the natural world at the heart of everything we do as a sector. It is uniquely about us here in Aotearoa New Zealand and how the world knows us.

Te Taiao represents new leadership based on a genuine partnership between Māori and Pākehā, and a holistic approach that starts on the whenua (land) and with each other. It comes from an understanding that we need to do things differently and that we need to act with urgency.

Te Taiao is the natural world that contains and surrounds us. It encompasses all of the environment and its offspring. Because we are born of the earth and it is born of us, each of us has an eternal connection to Te Taiao – the land, air, water and all biological life.

Our livelihoods and future depend upon the health of our environment and our communities. That is the key to the long-term viability of our farms, vineyards, orchards, forests, fisheries and our businesses and to our standing in the marketplace.

Across our landscapes, nature is under enormous pressure. We need to do a lot of things better and soon. We know this. Many of us are working on it, but we need to focus together to develop the pathways that will lift the way we do things across our sector.

Te Taiao is our way forward. It starts from the deep connection that we each have to the land, from which we will develop practical pathways for our work on-farm and right through the value chain. It will draw on Mātauranga Māori (traditional knowledge), modern sciences and sector know-how.

Mātauranga Māori is the unique, well-established body of practice built up over thousands of years by tangata whenua, who have a whakapapa (genealogy connection) to Te Taiao.

Drawing on these timeless principles and kaupapa will provide guidance and practical pathways that will help us achieve a new position for our businesses and our sector. And this will work in partnership with the best of our modern science and on-the-ground knowledge and expertise of our farmers and growers, because no one knows the land or water better than those who are working on it every day.



TE TAIAO: OUR FOUNDATION

Te Taiao will help us understand the impact and influence that we have and will deliver practical programmes and pathways so we can achieve truly sustainable, integrated practices across our farms, vineyards, orchards, forests and seas.

The foundation of Te Taiao is:

- › 3 kawenata (principles) that guide everything we do
- › 4 pou (pillars) that help us understand the different realms of Te Taiao and their interconnectedness – Whenua (Land); Wai (Water); Āhuarangi (Climate) and Koiora (Biological life).

MAHI TAHI: WORKING TOGETHER

We will work together to identify the critical issues we need to address in the immediate and long-term across the pou and the commitments we need to make that will drive change in practice across our sector, as well as developing indicators to assess our progress.

To drive real commitment for Te Taiao and to preserve the integrity of

Te Taiao, leadership is required. That governance will be a genuine partnership, based on Te Tiriti o Waitangi, to take us forward. As part of this, a taumata (panel) of tangata whenua with tikanga Māori expertise will be established to safeguard Te Taiao.

A key feature of our partnership approach is having common goals and a shared set of values and principles that underpin the relationship and how we work together.

Operational capacity and input from the sector is needed to co-design the pathways to bring Te Taiao to life on-farm, in-catchment and in-market. Real commitment will be important to ensure that Te Taiao is enduring, representative of the Sector and relevant.

This is the beginning of a new way of being for the Agriculture, Food & Fibres Sector of Aotearoa New Zealand. We are ready. The time is now.

For more on Te Taiao see: fitforabetterworld.org.nz/taiao



Our Te Taiao tohu (symbol) is Te Hononga, the Connection. Its design is a reference to Te Ao Marama which is the world of light or the modern world. Representing the space between Ranginui (sky father) and Papatūānuku (earth mother), it encompasses all of the environment and its offspring, and our eternal connection and relationship to Te Taiao, our natural world. The designs are also reflective of our land, water, air and life.

Te Taiao

OUR KAWENATA (PRINCIPLES)

Three principles guide us in everything we do.

POU OF TE TAIAO

Four pou (central pillars) help us understand and focus our relationship and practices around Te Taiao. All of these pou are interconnected and interdependent, working together to sustain life.

1 Our land, our water, our air and all biological life must be able to thrive without over-use.



3 If something is not healthy or well, we must fix it.

2 Any use is a privilege, not a right.

The three principles of Te Taiao guide our practice

Strategic Direction

1 OUR APPROACH

VISION-LED

Our new sector Vision and Strategy will guide us towards becoming a leader in premium food and fibre categories. This is a starting point that will get us moving quickly in the same direction, guided by the principles of Te Taiao. It will give us a basis for competitive advantage that will underpin wellbeing and prosperity.

BUSINESS-DRIVEN

Understanding the context and the implications for our businesses and supporting industries is critical to achieving the sector transformation we want. We need growing and profitable businesses because they will help fund the change. This applies to businesses in every part of our sector. It will be important how we connect with businesses in other sectors too, such as banking, energy and tourism, to create an across economy system change. We need to help businesses identify their transformational pathway, based on the next wave of innovations that is already happening around the world. This will include tuning into new consumer thinking and understanding how consumers will connect with us and our products, brands and value chains.

COMMUNITY-DRIVEN

The principle of doing the right thing is part of the New Zealand psyche. Nurturing connection and respect draws on and builds on the best of who we are. Our ethical approach in our production, processing and marketing systems with respect to animals, people, soil and water needs to be world-leading. It includes supporting fair transitions for people within our sector as we undergo transformation to achieve our Vision.

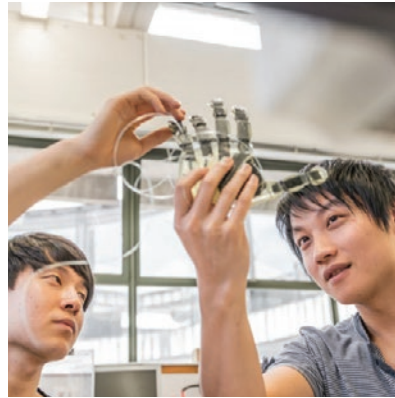
Through this, we will gain the respect of our fellow New Zealanders, including young people who will view us positively as a sector to work in, in the future.

GOVERNMENT-ENABLED

Forming an effective industry-government partnership is central to achieving the Vision. Central and local government are significant funders and provider of many critical services, as well as a policy-maker and regulator.

We need to be clear about the roles of government and our sector to make sure we get the balance right. Regulation, in particular, can enable innovation and value creation by focusing on intended outcomes rather than prescribing activities, while also providing standards that address some behaviours that are too harmful and just can't be accepted.





2 ENABLERS

TE TAIAO FRAMEWORK

We will embrace Te Taiao as the way we think and do things in our sector, based on a genuine partnership. It will be real and inclusive. Te Taiao will be developed to provide practical programmes and pathways to tackle the issues we face. (See the previous section.)

Modern regenerative productive systems are at the centre. By regenerative, we mean systems of farming and growing principles and practices in which we actively regenerate the natural environment while we are producing food and fibres. There is a long tradition of regenerative practices, and we will maintain the ethos - including principles of enriching soil health, holistic management, balance, diversity, respect and connection with past and future generations. At the same time we will explore new facets, such as connecting to consumers around the world with the same values. To underpin this, we need a programme that includes regenerative production trials and technology transfer.

SCIENCE AND EDUCATION

We need science, innovation, tertiary education and training services to be sharply focused on the outcomes we are aiming for with our Vision and Strategy. Our sector depends on their help to build excellence in areas critical to our success and competitive advantage. We want to see a willingness to try new operating models.

For our part, we need be clear as a sector about our high-level priorities so we provide useful signals to government policy-makers, science and innovation funds, technology investors and the education system. (See also page 17.)

CLIMATE AND WATER

We need to tackle climate change with urgency. Our science and research effort, government policy and our strategic planning as a sector must set an ambitious course for carbon neutrality and at the same time support resilience in our rural communities and economies. (See pages 14 and 16.) We also need to profoundly shift how we relate to and use water (see page 15).

INFORMATION SYSTEMS

One critical enabler will be having a pan-sector skills and employment dataset that provides data on education and training, workforce and employer profiles, workplace employment practices, and current and forecast skill needs.

We need to significantly lift our knowledge and understanding of the natural world that we depend on. Sustained strategic investment in information platforms across soils, water, climate and living systems is fundamental to developing a truly sustainable food and fibres sector. That knowledge and the ability to measure progress in realising our Vision will underpin our integrity as a sector and as a country. It is a matter of national interest.

PROTECTING BIODIVERSITY

In nature, richness of biological life is both a sign of health and a source of strength.

Aotearoa New Zealand's unique flora and fauna urgently need our support. And we humans in turn want our land and marine ecosystems to be healthy and productive.

Our country's unique biodiversity is critical to our nation's identity and our story to the world. As its guardians we must do more to ensure future New Zealanders can enjoy it too.

Great work has been done with covenants to protect natural areas, predator and exotic plant management, fishing technologies and substantial investment in reducing our impacts on freshwater.

As guardians, we need to build on this by developing nature corridors, and protecting unique landscapes and marine environments to help ensure native species can thrive.



3 SUCCESS INDICATORS (Areas for measurement)

BUSINESS AND VALUE CHAIN DEVELOPMENT

We will strategically focus on growing our billion-dollar-plus industries, developing new billion-dollar industries, nurturing entrepreneurship, and supporting the development of more premium value chains that we own and that return value to us in New Zealand.

We need all four, if we are to continue to contribute economically at the current level - and they require different types of support. They will not just happen. Potential candidates for new billion-dollar food or fibre industries are ones that produce very good yields in New Zealand microclimates, where we have unique intellectual property and where we can capture value.

Two enablers will be: developing policy to support business development in our sector, and aligning research, innovation, tertiary education and training capability to these outcomes.

To strengthen regions as economic units, we will nurture regional marketing approaches, including evidence of provenance and securing appellation for local specialties.

Also, land-use optimisation will be most effective at the regional level. We will ask, "What is best farmed here, in this place, with this climate, soil, topography and these water characteristics?"

We must provide decision-support tools to help with this. Also, central government support of this process and of emergent industries will be critical.

TOOLS AND FRAMEWORKS

Having access to tools and frameworks empowers people to manage change. For example, we have the beginnings of a suite of IT tools for farmers and growers and associated groups such as suppliers, processors and advisors. In many cases, the technology exists and the challenge is to get broad up-take.

In other cases, further investment is required in the pre-commercial space. There is a need to ensure availability of data across multiple platforms and avoid duplication.

WORKFORCE

Our reference for sector workforce development is the *Food and Fibre Skills Action Plan* (July 2019).

HEALTHY FOOD

The principles of Te Taiao lead us to take an inclusive view of our people and to want to produce and supply nutritious and safe food for communities here in New Zealand as well as overseas.

TRUSTED DATA

Data provides all kinds of benefits, at national, regional and catchment levels, as well as for individuals and their businesses - who may use it for benchmarking, for example. However, the information system must be designed and managed to provide trusted data.



ASSET OWNERSHIP

New Zealand has well-developed policy regarding ownership of strategic assets including both land and business assets. In our view this policy framework should be reviewed with a specific focus on ownership and control of value chains.

With continued population growth and climate change, the focus on food and water security globally will grow. There are strong incentives for other nations and international corporations to seek to secure low-cost supply of New Zealand food, fibres and water.

This creates a potential conflict with our strategy to market distinctive, high-value foods and fibres to discerning global customers. It's a matter of where returns land along the value chains and the capacity to build high-value supply chains in the face of commodity competition and free-loading.

While New Zealand needs, and should encourage, foreign direct investment, building and retaining ownership of our premium value chains is critical for our future prosperity. This is not just about land, but also about innovation, intellectual property, and processing, supply chain and marketing capability.

This is a regulatory issue and also about availability of risk capital and richness of our commercialisation eco-system.



4 CORE OUTCOMES

The Core Outcomes include:

- › Water management – see page 15
- › Carbon-neutrality – see page 14.

CONSUMERS AND SOCIETY CONNECT

Being ethical in our activities and telling the stories about this attracts consumers with the same values to our food and fibre products. It also establishes a relationship of trust within our communities and society more generally.

ECONOMIC GROWTH

The Treasury is projecting growth of New Zealand's Gross Domestic Product (GDP) at an average of 2% annually for the next 40 years, out to 2060. It is therefore reasonable to set this as a target for the Agriculture, Food and Fibres Sector. For the Sector to make the required transition to more sustainable systems while maintaining this level of growth will require confidence and investment.



5 STRATEGIC OUTCOMES

NATURAL WORLD AND COMMUNITIES

The principles of Te Taiao guide us to care for our natural world, including our land, water and livestock, and also our people.

GLOBAL LEADER IN ETHICAL PRODUCTS

New Zealand is capable of producing enough food for 40 million people. So, we can supply consumers in many nations, but we cannot feed the world. What we can do is show leadership in production of premium food and fibres.

We've got to be clear that's what we want to do. We have to decide to be the best, and we need to commit to doing – and being – everything that takes. And while we can measure our progress in economic terms, such as farmgate returns, success will be based on providing value through developing connections and demonstrating integrity.



FOOD FOR HEALTH

The principles of Te Taiao lead us to take an inclusive view of our people and to want to produce and supply nutritious and safe food for communities here in New Zealand as well as in markets overseas.

Statistics show New Zealand has the highest per capita food production in the world while continuing to have a poor health rating. Forty percent of us don't get the right nutrients in our diet, eating too much, too little or just not the right foods. There are 1.3 million New Zealanders who are clinically obese – the second highest rate in the OECD.

There's a cost to this. For example, nutrition supports focus and brain growth, so the ability of 183,000 Kiwi children living in poverty to learn and develop is at risk, and they are potentially locked into a cycle of poverty.

It's clear that if we can assist people to appreciate and consume good food, there are gains for our society long-term. Our own people eating for health from the food we produce must be part our global food story.

Already many farmers host urban people or local children on their farms or post on social media so Kiwis understand where good food comes from, and companies are contributing to initiatives providing lunches in schools.



Seeking market game changers

The greatest risk New Zealand's Agriculture, Food and Fibres Sector faces just now is under-estimating how much we need to change.

In the past we've usually evolved step by step into the future. Right now there are signals all around us saying we as a sector must take a great leap. We need not to transition but to transform.

We'll need to use all the clues and smarts we can access to help us. And, keeping our eyes fixed on the markets will be the key to our success, because that's where we need to secure the competitive advantage.

ADD VALUE

For a start, we need to be very clear that we are not a volume producer – and we should stop acting like one. Selling commodities in undiversified markets is a race to the bottom. Yet we have let that be our default position.

Instead, we must select the market niches where we can excel in providing and capturing value – and keep a razor-sharp focus on those.

And, let us set our sights on the real prize – which is owning market categories. One outstanding example of this is Zespri's development of the gold kiwifruit category. This New Zealand company worked with researchers to develop a new variety that would excite consumers.

Then, they carefully positioned gold kiwifruit as a whole new category, so in supermarkets you will find green and gold kiwifruit alongside each other – two where there was one. And, the premium returns are coming right back to New Zealand.

Such success results from doing many things with excellence. It means building a value chain that will get it right every time and is able to adjust as needed. It's a mission that we must put in front of every person in our sector and every person we work with.

HOW WE DO IT

We can show people who we are through our food and fibre products. We can stand for supplying distinctive, safe, outstanding, ethically produced, high-value foods and fibres to people who will value them.

So, starting there – we need to have the in-market presence and insights that keep us really close to what our consumers think. We need to be less defensive and more open to co-designing future food and fibre products with them.

The consumers we need to work with are the types of people who have choices and want to live by values. They're interested in the story of how these outstanding food and fibres are produced: the carbon footprint, the water footprint, the biodiversity impact. Already many in the sector are engaged with this globally connected, design-based thinking through the Te Hono programme.



Here in New Zealand, it's crucial we back people with a new idea or angle to have a go, rather than trying to make them fit in with our current way of doing things. We need to support them to develop something new and game-changing, be it a new product, a new market or an innovation in the supply chain. It takes care – good processes and investment – to nurture this.

Above all, we need to beware of forces that may work against transformation, for example by defending the status quo. One effective way of addressing this is to work with an outside group established from global experts and with direct access to government and policy makers that is designed not only to help the new paradigm but also to highlight those forces preventing the transformation at a business and sector level.

Speed and agility is important – other food and fibre-producing nations are watching the markets too. It's much harder to be successful if you go into a niche late, because then others will already have shaped the stories.

Let's put some timeframes around this: within 10 years our businesses and production systems should be almost unrecognisable from today. Within 5 years, our support agencies like science, technology and tertiary education should be unrecognisable from today – preferably earlier.

Why this is critical and urgent

New Zealand's modern food and fibres sector – based on farming, growing and fishing – has built up over about 150 years, and it has in many respects been world-class and at times world-leading. Our task now is to inform and guide this sector through a period of major disruption that is occurring globally.

So what is it that makes addressing the challenges so *uniquely* critical and urgent for New Zealand?

CRITICAL FACTOR 1:

THE ECONOMIC IMPORTANCE OF FOOD AND FIBRES TO NEW ZEALAND

New Zealand has the highest degree of economic dependence on production and marketing of food and fibres among the nations with developed economies. Food and fibres contributed 77% of New Zealand's merchandise export earnings in the year ending June 2018, at nearly \$42 billion worth out of a total of \$55 billion.



Today's travellers know that delicious and nutritious are not exclusive concepts. Demand for excellent cuisine with a view to better nutrition is driving new tourism trends.

Source: www.revfine.com/tourism-trends

So the impacts of global climate change, the shift to more trade protectionism around the world and changing dietary trends, for example, not only have profound impacts for us as a sector, but also our country as a whole.

Here in New Zealand we also have the real challenge of attracting an engaged and agile workforce against a backdrop of social change, honouring our Treaty of Waitangi commitments, increasing constraints on availability of water and suitable land, and our society's desire to lift our freshwater quality and support our biodiversity.

Slowing down climate change and building resilience into production systems, alone, requires an urgent, large-scale transformation. We will not be able to address this adequately through a business-as-usual approach. For example, we need to beware of using the usual 30-year horizon (to 2050) for our collective plans, as that won't be soon enough to help achieve the global emissions reduction targets.

On the other hand it takes time, capital and confidence to develop and adopt new technologies, shift farming and growing systems, develop skills and attract talent. From the size perspective, we're talking about changing how we manage 14 million hectares of agricultural land in New Zealand.

We cannot avoid the challenges – they are already upon us. We will have more and higher quality choices if we recognise and own them now and work together with urgency to be fit for a better world.

CRITICAL FACTOR 2:

NEW ZEALAND IS A SMALL TRADING NATION GEOGRAPHICALLY DISTANT FROM MAJOR MARKETS

Among the nations that rely on food and fibres for a significant proportion of their income, New Zealand has the smallest domestic market. This makes us more reliant than most on successfully exporting produce – and more vulnerable to problems with trade.

In particular, we are more exposed to imposition of non-tariff barriers like sanitary and phytosanitary standards. This amplifies the importance of our biosecurity system, for example.

Linked with this, we are fairly isolated geographically, which means our goods have to travel a long distance to significant markets and we may not be included in regional trade blocs. This shows the importance of our sector working effectively with our partners and associated systems.

CRITICAL FACTOR 3:

CROSSOVER BETWEEN THE AGRICULTURE, FOOD AND FIBRES SECTOR AND THE TOURISM SECTOR

These are New Zealand's top two export income earners and major sources of employment – for us as a nation and for the regional economies. And, these two sectors both rely on our natural resources and assets. Because there is a great deal of crossover between these two, we need to work in a complementary way. For example, both operate in our natural environment while trading on New Zealand's reputation as a place of magnificent natural beauty.

The Vision and Strategy show how we can use a pan-sector approach to address these needs.

The call of our times



Consumers will centre their diets around plant-based food and drink but also allow for ethically produced meat, dairy and other animal products.

Source: ANZ/Mintel, 2030 Food and Drink Trends, February 2020



Start-up company Perfect Day says its plant-based dairy product can be as much as 40% cheaper than milk protein from cows. It also uses significantly less water and land, and reduces greenhouse gas emissions by 80%.

Source: Fast Company report, November 2019



Millennials (born 1981 to 1996), the first generation of digital natives, are now aged 25 to 39 and account for one-third (32.9%) of New Zealand's workforce.

Source: New Zealand Statistics Department Infoshare



The world we live in is changing, fast.

The way we respond on climate, freshwater and biodiversity will define us as a sector and as a generation. Consumers and customers will judge us by it, and so too will our grandchildren.

CHALLENGES

When you look around at the key food and fibre-growing regions of the world, you see many suffering loss or degradation of topsoil and freshwater.

Water scarcity and degradation is becoming more acute globally. The productive potential of many catchments around the world is now constrained by water quality or availability issues, and these constraints will grow without focused investment in technology and infrastructure. This is because the human population is using more water for drinking, agriculture and manufacturing and also because climate change is melting ice globally and causing more floods and droughts.



Questions around the ability to feed a growing world population are therefore becoming more pressing, and this has led to heightened food security concerns in many nations. One sign of this is the interest in new sources of protein, such as meat analogues made from plant material.

This is our responsibility: we must put true sustainability at the centre of everything we do in our sector. And there is opportunity in this too.

We in the sector may know this, but many may not know what to do and feel unable to change. We want a way forward that empowers us to make the changes we know we need to make. We want to be confident that we will get to the right place for the environment, for our businesses and our communities.

RE-FRAMING

We need to work together as a sector and apply our Vision and Strategy. Every person, business and industry should consider how their strategy, business plans and actions align or contribute to the Vision including Te Taiao.



“We have stripped most of the native vegetation and done a whole lot of damage, and we’ve gone as far as we can down that road. And so now it is time for us to try and find the balance and restore those ecosystems [and] find a place for humans living harmoniously within it.”

Greg Hart, farmer using regenerative systems, Hawkes Bay (June 2017)

From page 13

For each of our areas of activity we must understand the gap between where we are and where we need to be, as well as the relative priorities and relationships between them. And when we look around, we will see some of the insights, tools and working examples already exist. When we all do this and start to make change, we will bring the Vision and Te Taiao to life.

At the sector level, this mapping could cover but not be limited to: land mapping, water health at catchment level, sector information systems and data, biodiversity health and objectives, science and technology priorities, investment and regulation, along with the economic contribution and potential of various sectors, and sovereignty and investment-related regulation.

The land mapping, for example, could underpin regional and national land strategies for optimising land-use choices in the context of both economic and environment objectives.

Over time, as we pull in the same direction, we will build platforms for activities such as marketing, where we tell the stories of what it means to live and work with Te Taiao.

For our future, doing the right thing is now the only thing.

Climate change, for example

To understand how profoundly different things are now, consider climate change. Human activities over a long period of time have been putting more greenhouse gases into the atmosphere and this has now triggered a change in climate patterns worldwide.

Scientific evidence suggests we can slow this down, but currently global efforts are not meeting the milestones. The recent Paris Accord includes a warning we need to keep global warming under 2 degrees to avoid catastrophic effects. At the moment we are on a track that will take it to 1.5 degrees in 2050 and 2 degrees in 2070.

The urgency of climate change means consumers are now increasingly likely to demand evidence of responsible production practices.

In New Zealand, 10 million hectares, which equates to 70% of our production land area, is supporting ruminant animals that produce the potent greenhouse gas methane as part of their digestive process.

This means our sector produces just over half of our country’s greenhouse gas emissions – while producing 77% of New Zealand’s merchandise exports and using a high proportion of renewable energy.

We have established tightly focused research programmes that are looking into possible solutions on emissions. Now our science and research needs to be ambitiously focused on how to deliver carbon-neutral food and fibres.

A necessary part of New Zealand’s response to climate change is also reducing net emissions through planting trees to sequester carbon. Trees are powerful for sequestering carbon, but we need to strike the right balance between achieving gross and net emissions reductions (in the end we must reduce gross emissions). It is critical to plant the right tree in the right place in our landscapes with the long-term in mind.

Alongside doing everything we can to slow down climate change, we also need to support our sector to deal with the warmer and more unpredictable climate that we are already experiencing. It is critical we provide our producers and those who run our infrastructure with tools and frameworks that enable them to be more adaptable and resilient.

The report *He Waka Eke Noa – Our Future In Our Hands* (July 2019) is an important guide for this work, as it outlines a collective commitment to respond to the challenge of climate change and a 5-year programme of action.

Precious water



Tuning in to nature shows us what's really going on with our water. And being awake to this is our responsibility as a sector that manages such large areas of New Zealand's land and associated freshwater.

When we tune into nature, we are aware of water cycling through the landscape and the atmosphere. As farmers, growers and fishers we work with this cycling water to grow food and fibres.

But when we get too caught up in our human endeavours and narrow our view, we don't see it this way. Then, it's possible to unthinkingly treat a stream as a drain, to see a degraded waterway and not be worried about it; to take a first-in-first-served approach to irrigation water.

When we are tuned in, we see that every living thing needs water to survive and thrive. Not having enough water or having bad quality water is a kind of poverty – for any being. It's why we have to maintain minimum flows in rivers, for example. It's also why we talk about “water rights”, and, it shows why talking about water can be hard. But, it gives us a starting point that water is precious and needs to be treated as such.

WORK WITH CATCHMENTS

We see, too, that water gets captured in wide areas of land and flows down into waterways – so we can work with the catchment as a framework.

We can support landowners in catchment groups – working together and highly motivated to look after their local waterway.

Working with how water naturally occurs in our landscape also gives us a frame for thinking about potential. We need to invest in getting a better understanding of how to optimise the natural productive potential of each catchment, based on the available water, and how we may enhance it while protecting wellbeing. This will entail helping individuals living and working within the catchment to play their part.

New Zealand has relatively abundant rainfall and good reservoirs of groundwater. But our existing models tell us we are now hitting up against, on the one hand, an environmental limit on how much nutrient can be leached into waterways and, on the other, scarcity of water – which is only going to get worse.

We can change to working with the natural water cycles and become really excellent at this. Because while we face challenges in New Zealand, we could achieve a relative abundance of high-quality freshwater compared to other food and fibre-producing areas of the world.

We humans have evolved and always lived and worked in natural environments. How can this shared cultural wisdom show us ways forward now?

We will need to work our way through some knotty challenges associated with water – locally, regionally and nationally, and it may feel like we take steps backward before we start moving forward.

One challenge is the need to develop on-farm and collective infrastructure, both to improve water availability and water quality, which requires investment and dealing with associated resource management matters.

It's important we have a mechanism to drive careful use of water and, where necessary, to prioritise access to water. This would be based on an understanding that although we may think water belongs to everybody, water is already priced now – with its value bundled into land pricing. If we are to price water we must find the political courage to deal with the related ownership matters under the Treaty of Waitangi.

Linked with all this, we need to be excellent at getting and showing evidence we're using water responsibly. Success in the water management space can be measured through the health of reservoirs, rivers, lakes and oceans; and the availability of affordable water for all users.

We can take inspiration from water itself – it has an incredible ability to find its way around any obstacle!

Supporting farm-level change

The people who run farms, orchards and other enterprises in New Zealand are well used to working with change and uncertainty.

But it's clear as a sector we currently face change and uncertainty at whole new levels. In some cases farmers and growers will be able to evolve current production systems and in others they will have no choice but to undertake more radical change.

The new sector Vision and Strategy shows us the opportunity that exists for us: to own our part, do the right thing and lead the change. We can work together to design modern regenerative production systems that will look after the wellbeing of the natural world while producing high-quality, trusted and healthy food.

As a sector we need to consider how we will support our farms and other enterprises as they find their way to this future. The answers won't be the same for every one of them. There needs to be a range of options, and where possible support needs to be tailored.



TE TAIAO

The guiding principles of Te Taiao will help farmers and growers think about their role and what they do. Te Taiao provides a framework for thinking deeply about how we can be as carbon-efficient as possible, enrich the soil, look after water, maintain biodiversity. This will be deeply grounded in farmers' and growers' knowledge of the land and water, and their local community.

SUPPORTING CHANGE

As mentioned, in some cases there will need to be profound change in a production system – beyond what we would ordinarily think is possible. This highlights two factors about our production industries: they are largely made up of small to medium-sized enterprises and often they own a large land asset with little capital liquidity. There will be a range of possibilities for change within the current biophysical, financial and staffing structures of an existing farm business, but they may not be able to undertake radical enough change without support. Availability of investment capital is the most obvious limit – and this is closely related to investors' confidence in getting good future returns.

FRAMEWORKS AND TOOLS

Frameworks and tools are essential, and we as a sector and as a country need to put our weight behind these to make them as effective as possible. The Council has selected a few that warrant particular attention.

Our freshwater management needs to undergo nothing short of a revolution. Catchments provide a

frame for farmers and others to come together to understand their relationship with a local waterway and look at how they can work together to maximise its wellbeing. There is already a network of catchment groups around the country, and an important feature of these groups is they are run by farmers and growers themselves.

Related to this, we've made an important start with farm environment plans. The Council encourages the use of living documents that integrate many aspects of the farm management – showing what has been achieved and what is to be done. Over time these should be developed to reflect excellence in farming practices in a catchment context.

Similarly, we strongly encourage regional approaches that celebrate local foods and fibres, along with the milestones, the personalities and the stories that are the fabric of life in the region. This framework provides a marketing platform for our sector and others such as tourism. It also builds pride in our sector. One tool to help with this is securing provenance and appellation for local specialties.

We have the beginnings of a suite of IT tools for farmers and growers and associated groups such as suppliers, processors and advisors. With further development and up-take these could take our farm management, product traceability and biosecurity systems to a new level. There is promising development of environmental monitoring tools based on sensors that can give land-users a real-time picture of what is happening on the land and in the water. This work needs to be accelerated to help farmers and growers make good decisions.

Research and education for our purpose



Our Vision for the Agriculture, Food and Fibres Sector must trigger bold changes in how science, technology, education and training organisations are funded and run in New Zealand. We need these services to be much more sharply focused on the outcomes we are aiming for. This requires clear prioritisation as a sector and new levels of collaboration.

Collaboration gets the right mixes of skills, assets and resources applied to a research question or to develop a skilled worker. But we see that collaboration can be hard to achieve because people often find it difficult to work outside current structures.

The reality is that research for our sector, for example, is being undertaken in all seven universities, several polytechnics, and all seven Crown Research Institutes plus various public and private research institutes or specialist centres. Competition for funding forces research organisations to compete aggressively at a business level for a limited funding pool. The need to bid in funding rounds places a significant administrative burden on science teams. Much of the funding they gain is relatively short term and project-related.

We urgently want to explore new operating models that bring the best mix together at any time and build teams, assets and resourcing that will help us achieve the outcomes that are critical to us realising our Vision.

Not least, the Vision guiding principle Te Taiao will spur us to consider Mātauranga Māori and community-based knowledge along with modern science and to value the creative tension this brings.

Change is already underway in the vocational sector to help us attract, train and retain the high-skilled and adaptable workforce we will need. This includes people with non-traditional skills such as language and cultural understanding.

Our best chance of succeeding in this is to adopt a cohesive sector-wide approach that addresses every stage of learning, training and work, in all facets of our production, processing and marketing and related services. Our forward-looking Vision will help to show our current employers the kind of workplace and skills they will need. It will excite potential entrants.

GOVERNMENT AS A FUNDER AND PROVIDER

The Government is pivotal in this – as both a large funder and a significant provider of science and technology as well as tertiary education and training services, in addition to its role in policy and regulation. A quick calculation shows the Government spends about \$300 million a year on applied food and fibres research, much of it in co-funding arrangements with industry. We'll get better results from this being spent in a more strategic way.

If the National Science Challenges were designed today, for example, under the Vision we would expect a challenge called "Exceptional Food and Fibres from the Land and Oceans of Aotearoa New Zealand".

Instead, we have food and fibre-related science capability spread over 6 of the 11 challenges and no strategic link between them aligned to the outcomes we need.

The two need to work in tandem: we as a sector indicating what we see needs to happen and several Government agencies helping to make it so. For our part, this requires being clear about our top priorities, both for what work is done and how the work is undertaken. In this regard we have important reference points: *Primary Sector Science Roadmap – Te Ao Turoa* (May 2018), *Food and Fibre Skills Action Plan* (July 2019) and *AgriTech in NZ: Towards an Industry Transformation Plan* (July 2019) and *He Waka Eke Noa – Our Future In Our Hands* (July 2019).

A NEW STRUCTURE

There are overseas examples where vastly better outcomes have been achieved from bringing science, technology, education and training into a single institutional base supporting a sector. This results from co-design by business, government and the university, and also government allowing the creation of a customised system for tertiary education funding in the sector. A notable example is Wageningen University and Research in the Netherlands, formed in 1998 from a university and several government research organisations to support their food and agriculture sector.

We realise the complexities and challenges in designing such a structure are significant. However our sector is dealing with significant challenges and opportunities and we need to be ambitious.

Taking action for our future



At this point the Primary Sector Council (PSC), having identified a real and unique opportunity for New Zealand and our Agriculture, Food and Fibres Sector, is now passing on the baton.

Our view is the Sector needs to move quickly. The opportunity for us all is defined by the threads underpinning the Vision:

- › Put Te Taiao at the heart of what and how we will do things: our Te Taiao principles will guide us to respect, nurture and value our land, water, air and biodiversity and to form genuine partnerships among people
- › Regenerative production – apply insights and tools to create a new generation of ethical production systems
- › Outstanding products – be marketed in our innovation process and what we offer to consumers
- › Aotearoa New Zealand – communicate what defines us and what we produce to create a deep consumer connection.



BEING THE LEADERS THE WORLD NEEDS

We recognise the progress so many of our farmers, growers, fishers, makers and crafters have made in recent years and the opportunities they have created for themselves and for New Zealand. We must build on this.

The principles of Te Taiao show how we can shift into an entirely new construct. This matches the shifts taking place in society and what people now want to support as citizens, as workers and as consumers. We want to show leadership – to not just meet the minimum standards but to advance and explore what is possible.

This is a generational journey requiring real commitment and belief, especially by funders. Investment will need to be made up-front and for a sustained period. We will look to partner with government as a key source of funding, particularly in the foundation years. However, funding for this change must come from all participants, not by compulsion but willingly because it brings real value back to them.

CAPTURE VALUE

The success of our sector transformation will therefore depend on capturing value and rewarding those who produce and supply outstanding, ethically produced food and fibres. We propose this can be achieved through a New Zealand premium food and fibres provenance system. This would entail two main parts: verified products and associated marketing. Building this requires a cohesive and phased approach, with key elements tied together.

A phased approach would include beginning with a few exemplar products and companies that provide confidence and positioning, along with insights for the fast followers. We can also expect a halo effect to be conferred on the wider sector (as it has overseas). Our communications will be iterative, taking both our network and global discerning consumers with us on the journey, and complement central government's current investment to support the tourism sector.

We believe the establishment now of an across-sector approach paves the way for this important transition and transformation process.

SECTOR LEADERSHIP

We will need to combine our collective strengths to face the challenges together. It will take each of us contributing insights, energy and commitment – for the benefit of New Zealand. This will be the largest transformation of New Zealand's economy since the reforms of the 1980s. And those who live and work on the land and water – whenua and wai – are at the centre of this transformation we have to make.

To coordinate and lead our activities a new across-sector group will drive the transformation of the sector, becoming the guardian of the Vision and leader in implementation of the Strategy. It will be an independent leadership body with the support from the sector. This group, with the working title Agriculture, Food and Fibres Aotearoa New Zealand (AFFANZ), will lead our approach: vision-led, business and community-driven and government-enabled. It will have the mandate to develop options and scenarios; advocate and find solutions.



“Many farmers are fed up with the status quo of commodity beef. They want to be rewarded for individual quality and performance, not to be averaged and reliant on a volatile commodity market, so we pay on quality measured by marbling. We reward effort to produce a top-quality animal.”

Matt Crowther, General Manager Wagyu for First Light, July 2019



A New Zealand grower of kiwifruit identical to the variety produced by a grower in Chile **will earn up to three times more** for their fruit in the market through a combination of brand power, on-orchard innovation, fruit-quality and reliability of supply. Added to this, they receive even higher returns at the orchard gate based on greater average productivity.

Source: Zespri, February 2020

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In doing so, it will provide ways for the sector to discuss matters that challenge us, so we can develop understandings, consider options, develop solutions and take action. The three Te Taiao principles (see page 6) provide a starting point for these discussions. The group will guide the evolution of the sector’s partnership with government, which will include thought leadership to input effectively into legislative and regulatory processes.

Governance of this work will be provided by a board of diverse people drawn from leaders across our sector, iwi/Māori, businesses, communities, as well as independent specialists, and supported by government. This breadth of capability is important, as the coming together of several large disruptive influences has created a complex environment for us to traverse. The design of the new cross-sector entity should have: the greater good of New Zealand at the core, ensure it will have real influence and allow for an innovative and fast-paced approach.

START SOMEWHERE

We need to recognise we all have different feelings about change and uncertainty, and this is being provided for in our sector thinking. The thing is, we all just need to start somewhere. There is a way forward for each of us. We won’t get everything perfect – there will be some trial and error. What’s really clear is we can’t afford to stay still.

MAKING THIS HAPPEN

The key first steps are:

- › Continue to develop Te Taiao for a final co-design summit; participate in regional presentations in preparation for establishing Te Taiao pilots
- › Develop carbon change planning scenarios and proposals, linking this with current activities, and identifying next steps and what support the sector might need to make them.
- › Develop an issues paper on water allocation and storage issues relevant to our whānau and communities, and suggest a way forward
- › Develop an on-farm options paper outlining what first steps can be taken now, additional products or tools that are available and relevant work from around the world that assists farm, business and community change processes
- › Develop a combined sector science and innovation white paper to engage with government, and influence our sector investment funds to reflect Te Taiao and align to our collective priorities.

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PRIMARY SECTOR COUNCIL

MEMBERS

Lain Jager (Chairman), John Brakenridge, Tony Egan, Stephanie Howard, Julia Jones, Mark Paine, Julian Raine, Neil Richardson, John Rodwell, Steve Saunders, Steve Smith, Miriana Stephens, Nadine Tunley, Puawai Wereta and Nigel Woodhead.

“It’s not about environmental vs. economic outcomes. Our best and most prosperous future will be delivered by caring for our land, water and biological communities. Environmental excellence is our only viable strategic pathway forward. Many of our leading farmers are already well down this path. Yes there are challenges ahead of us, but they can be positive challenges leading to a bright future.”

Lain Jager

“My involvement in the Council has been thought-provoking, inspiring and a reality check. Our current practices are unsustainable: we must take stock, change our thinking and act decisively to do better.

My responsibility is to my grandchildren - to leave our farm in a better space for them, our community and the environment.

Collectively we must all share the load, starting with personal actions to do the right thing immediately.”

Julian Raine

He tangata kītahi:
A person of a single word

“My grandparents were hard-working farmers of the land who provided for their whānau, marae and the wider community. They were honest, reliable and they lived by their word. Their relationships were based on trust and the openness they vested in each other.

I often think about them and our community, and how their generosity and humility have shaped the person who I am today. I then extend this kindness to the world we live in today and the world that my uri (descendants) will live in, when it is their time.

I hope that they (through whatever medium or channel) will tell a story about how we as a Sector during our lifetime were honest, creative and forward-thinking by putting the wellbeing of our natural world and our people at the heart of every decision we made because it was the right thing to do. That would be a good legacy and something to be proud of.”

Miriana Stephens

“Future success for the sector is completely in our control. A strong tomorrow and setting our future generations up for a success pathway will be determined by the choices we make today, so let us choose well.”

Julia Jones

“It has been an absolute privilege to sit on the Council alongside some of New Zealand’s most respected and experienced agricultural leaders and future thinkers. As a young food and fibres producer I believe that Taiao and our Vision, *Fit For A Better World*, will help guide us through the challenging times that we can all see coming but struggle to see a way through.

I encourage those reading this document to think about what the Vision and Taiao mean for them on a day-to-day basis and to share their thoughts and opinions with friends and colleagues. In the words of Margaret Wheatley, “Be brave enough to start a conversation that matters.”

Nigel Woodhead

Disclaimer This report reflects Council discussions and not necessarily the views of all individual members.

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“The challenges for New Zealand agriculture have been very well articulated. What has not been given enough focus before now is the opportunity to become a 21st-century global exemplar of an agriculture-based, holistic and advanced, inclusive economy and society whose products, services and intellectual property are sought by discerning consumers globally. The Council has set out to design and articulate such a Vision, strategy and leadership platform that can actually deliver the very best of New Zealand to the world, for the benefit of all New Zealanders.”

Neil Richardson

“We believe that in a fast-paced, sometimes-faceless world, there is a need to escape back to nature through what we eat, drink and wear. We believe that Aotearoa New Zealand can provide this escape route to people all over the world in the same way our land, oceans and people do for those who choose to visit us.”

Steve Smith

“Most of us know Aotearoa New Zealand occupies a very special place as part of spaceship earth. We started with an isolated set of islands with abundant bird life and unique tree species. The profound transformation of our landscapes from agriculture, industry and urbanisation has set a stage which now dictates our future actions.

As a member of the Primary Sector Council I have come to realise we face an exciting future. Stocked with some of the smartest farmers in the world; with access to cutting-edge science and technology; and with a global reputation for ethical business practices; we are well-placed to lead the way in producing new food and fibres that are fit for a better world. We share a belief in the value of working together as a coordinated sector, notwithstanding our diverse backgrounds. We envisage new approaches to food and fibres that will renew the wellbeing of Aotearoa New Zealand in its broadest sense: our people and place, both now and for future generations.”

Mark Paine

“What an important crossroads our Food and Fibres Sector has arrived at. By following the “high road” and using Te Taiao to guide its direction, the Sector will:

- › Re-establish its position in Aotearoa as the driver of environmental, social and economic prosperity, and
- › Resonate with consumers around the world who care and value how we produce our food and fibre products for them.

This realisation, and the development of a Vision and strategy for achieving this, has been a privilege to be part of in the Primary Sector Council work.”

John Rodwell

“There I was...

*Greenies to the left of me...
You're joking to the right,
Stuck in the middle,
black hat feeling about right
Here I am...*

*Different, listening, an urgent plan
‘Taiao’, Māori wisdom,
nature calling this man
There I go...*

*My Country, Aotearoa - New Zealand,
must have its say
My World, each of us must lead in
a new way.”*

Tony Egan

**FIT FOR
A BETTER
WORLD**

AOTEAROA
NEW ZEALAND