

# :WELL\_NZ

# SUMMARY

## Reframing New Zealand's Food Sector Opportunities

A CONVERSATION STARTER FROM TE PUNA WHAKAARONUI:  
THE FOOD AND FIBRE SECTOR THINK TANK



**Te Puna  
Whakaaronui**

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## FOREWORD

New Zealand's Food and Fibre Sector is intrinsic to our country's economic success; agriculture has defined our culture, communities and landscape for decades. With thirteen million hectares of land in production, 14% of jobs, 82% of merchandise export earnings and 11% of our gross domestic product dependent on food and fibre production, the importance of the sector to our nation's wellbeing is clear. Economic, societal and environmental prosperity is achievable – sector growth is fundamental to New Zealand's success in tomorrow's world.

Structuring the Food and Fibre Sector (the Sector) for growth must build on our strengths: our farming heritage, te ao Māori, our people, our existing food ecosystem and our love of our land, freshwater and oceans. In the near term, food production is being impacted by the consequences of pandemic, inflation and war: rising fuel and fertiliser costs, labour shortages, as well as shipping and trade constraints. Underlying these immediate concerns New Zealand is facing some significant structural challenges that will push our nation's wellbeing backwards if we fail to act with sufficient strategic focus and urgency.

The scope and pace of change being thrust on the Sector is overwhelming. The direction of its response is challenging all value chain participants. Negative narratives and finger-pointing at the Sector over methane and water quality is divisive, destructive and distracting. A collaborative "national mission" to optimise the rate of positive change and continue to grow the Sector for the benefit of all New Zealanders is a much more effective platform for success.

Taking action now to develop a strong and widely supported strategic focus, as well as aligning change leadership, can set the Sector up to realise significant export growth in under forty years. Success for the Sector, and all New Zealanders, needs alignment and optimised policy, incentives and investment.

Perceiving the Sector as a 'problem' masks the significant economic opportunities it can create and maximise, as well as the opportunities for a coherent response to climate change.

### **Te Puna Whakaaronui Thought Leader Group**

*Lain Jager (Chair), Debbie Birch, Andrew Ferrier, Nick Hammond, Rob Hewitt, Neil Richardson CNZM, Murray Sherwin CNZM.*

## Position :WELL\_NZ

### THE NEW NORMAL

New Zealand's economic recovery, in a post-COVID-19 world is further incumbered by high inflation, geopolitical uncertainty and unpredictable climate change events. Delivering on our economic aspirations will need Government and enterprise to take a more active and strategic role to co-ordinate investment, innovation collaboration with the private sector.

The :WELL\_NZ framing seeks to inspire and inform the development of potential pathways for New Zealand's Food and Fibre Sector to help it navigate global shifts occurring at an international and national level. :WELL\_NZ frames and informs changes and actions needed to transform the sector for long term, future success.

### DRIVERS OF CHANGE

Since :WELL\_NZ going to print, the factors and drivers shaping the New Zealand economy are converging even more sharply against the backdrop of conflict in the Ukraine and the impact of changing and moving at pace. New Zealand's leaders, food producers, regulatory and funding bodies, as well as industry enablers need to recognise the change and gear up the innovation, science and entrepreneurial system to respond. New Zealand will need collective courage and conviction to compete with those countries and enterprises already investing for tomorrow's world.

These three drivers help frame the discussion of potential avenues for the Sector's success:

1. climate change,
2. increasingly complex consumer preferences,
3. technological progress.

#### Driver 1: Climate change

There is a considerable amount of work underway on mitigation action plans. :WELL\_NZ does not duplicate this work but aims instead to highlight climate change as a major driver of global change which will impact considerably on New Zealand's operating context. Governments and large multi-national companies alike are carving out dedicated funding to support change. They are making policy decisions to reshape their domestic and export food markets.

Reducing the Sector's overall climate impact, however, will require a whole of value chain approach: logistics providers, food processing, cold chain and food waste all need to be considered within a holistic solution.

#### Driver 2: Consumer preferences are changing

Peoples' food choices are changing in favour of sustainable, ethical and healthier options. Climate change and security of supply considerations have seen the emergence of 'buy local' marketing campaigns. Currently two major global trends are capturing the attention of governments, food producers and manufacturers. Consumers are increasingly willing to pay for foods that enhance mental and physical health, are environmentally sustainable, and go further to be planet positive.

In addition, the global pandemic has brought wellbeing to the fore. Scientific research has found strong links between nutrition and mental wellbeing.

Against a backdrop of growing consumer demand for sustainable and plant-based products, leading food manufacturers have become increasingly agile and brought to market innovative new products with improved environmental credentials.

### Driver 3: Technology

Advances in energy, cultured meat, bio-processing, climate change and waste mitigation technologies are accelerating simultaneously providing integrated, locally-based and cost-effective options that have net (or negative) carbon emissions and enhance social wellbeing.

Global food systems will be affected by changes across all of these technologies, however the immediate technologies that are key for the Sector to consider are outlined below.

#### Alternative Protein Technologies

Alternative protein is a commonly used term for a wide range of products. Sources range from algae and insects to re-engineered plant-based legumes and a variety of meat substitutes including lab-grown meat. The various proteins are not equal in their potential for disruption with cell-based proteins and precision fermentation technologies being potentially more disruptive than plant-based foods.

**Plant-based foods:** use plant material to mimic the taste, flavour and texture of meat, seafood, eggs, and dairy. Advanced plant-based technologies use both modified and non-genetically modified organisms, as well as modified methods and complex extrusion technology that enables plant proteins to mimic meat like textures.

**Cultivated or cell-based proteins:** use a bioreactor (or “cultivator”) to enable cell growth that replicates the cell tissue structure of different cuts of meat or other animal proteins accurately. Cell-based start-ups specialise in different elements of the process, including producing the scaffolding that determines the texture and 3D structure of the end-product, the cell culture medium to feed the cells, and the cell lines from which the end products are cultivated.

**Precision fermentation:** uses micro-organisms, like bacteria or yeast, to produce specific molecules such as proteins, enzymes, flavour molecules, vitamins, pigments, and fats. These molecules are produced in a vat, like a beer brewery, instead of via animals or plants. Because the doubling time of growing microbes is hours, rather than the months and years required to grow traditional proteins, precision fermented proteins are expected to be considerably more efficient than their traditional counterparts within this decade.

#### Personalised Nutrition

This approach uses technology and biology to understand which foods can support an individual/group of individuals towards optimal physical and mental health. Globally, work is already well underway applying these techniques to formulate products. It falls into three categories:

1. Stratified nutrition: attempts to group individuals with shared characteristics and deliver targeted nutritional advice;
2. Personalised nutrition: goes further by attempting to deliver individualised nutritional based on, predominantly, biological measures such as genetic characteristics; and
3. Precision nutrition: combines an individual’s genetic, environmental and lifestyle information to deliver advice suited to each individual.

#### Food-as-software (FaS)

Food which integrates the latest advances in science and technology to make food production radically easier and faster has the potential to disrupt the food industry and traditional production methods in ways we have not yet seen. While still in its infancy, food-as-software is essentially the continual design and improvement of food products and ingredients through rounds of iteration, in near real time, using large databases of food grade molecules and nutrients adjusted for specific variations such as taste, texture, and nutritional content.

### IMPACT OF CONVERGING TECHNOLOGIES

Technologies are not disruptive by themselves, they amplify change. Technological convergence will create synergies and fast paced change across the food production system. Te Puna Whakaaronui is monitoring for the convergence of technologies:

**Renewable energy technologies** are continuing to reduce in cost and improve in efficiency. The impact of cheap energy means energy intensive production systems, such as indoor vertical farms and precision fermentation, will become proportionally cheaper and more competitive over time.

**Alternative feedstock for cellular meat** are needed to improve price competitiveness. Companies are actively exploring alternative technologies such as precision fermentation; these will significantly improve over the next few years.

**Food printing and texture** technology still has the greatest development challenge, but trials are progressing quickly. Ongoing and significant investment suggests further gains will be made in multiple meat/foods in the coming years.

**Bioreactor technology**, (precision fermentation in a vat) have the potential to become a foundational technology for precision fermentation, and when coupled with food-as-software capabilities, adoption could be accelerated.

**Gene Editing** or Modification (GM) is a challenging topic in New Zealand and elsewhere. Conversations are underway in the EU and UK about the possibilities and implications of new gene editing techniques, and we need to have them too.

#### Opportunities for New Zealand

There are two aspects which could increase product opportunities for the Sector. The first is the potential role of plant and animal products obtained from New Genetic Technology (NGT) in contributing to a more resilient and sustainable agri-food system. Examples include:

- plants that are more resistant to diseases;
- improved agronomic or nutritional traits
- reduced use of agricultural input, including plant protection products; and
- faster plant breeding.

The second aspect is the ability to develop cell cultures for use in precision fermentation to create cell-based meat or milk.

In addition to developing product opportunities, strengthening New Zealand's overall scientific capability is a key economic enabler. New Zealand's science and research capability extends across: protein and metabolites, plant and animal biotech, as well as bioactive compounds and enzymes. This platform can support the sustainable development of terrestrial and marine economies.

#### SUMMARY

Change and technological evolution is a constant. With its reliance on global trade New Zealand is impacted by international policy and disruption from converging technologies we cannot influence. We must be adept at monitoring and adapting. New Zealand's dual heritage provides an opportunity to evolve a shared set of values, principles and language in response to global drivers of change.

We must not be shy of asking the tough questions and challenging existing assumptions as we prepare ourselves for change. The time to examine risks and opportunities particularly in relation to game changers such as genetic engineering.

New Zealand has a short window of opportunity to invest and make progress. We can build resilience into our natural food production system and identify opportunities within a modern food space to grow and innovate. The global food and wellbeing economies represent opportunities for New Zealand's Food and Fibre Sector... if we are prepared to embrace change.

## Sustain :WELL\_NZ

The Food and Fibre Sector future is difficult to read. Global changes are many and fast moving. It is clear people will always need primary produce...but will they need New Zealand produce?

New Zealand's success to date is based on a solid international reputation, core assets (including the natural environment), and capabilities. Farmers have invested and developed high performance production systems through generations. Building new systems and markets will require flexibility and change, but there is a need to protect, and enhance, what we already have to drive future success.

The nutritional health and wellbeing of New Zealand's people and communities is a conversation we must have alongside strategies that consider the economic sustainability, productivity and growth of the Sector.

### SUSTAINING OUR HOMEGROWN VALUES

New Zealand's farming sector influences the vitality of communities the length and breadth of the country. The Food and Fibre Sector underpins our ongoing economic success. However, while forecasts to 2025 remain strong, the ability to generate high returns will come under increasing pressure.

The Sector will need to be well supported and remain proactive in the face of significant and complex change.

### INDIGENOUS HERITAGE A CORNERSTONE OF SECTOR TRANSFORMATION

New Zealand has inherited two powerful knowledge systems. Using the wisdom and understanding of both systems we can develop a unique and relevant response to the drivers of change. To do so we must evolve a strong partnership with shared values, strong collaboration and shared success. Restoration for a sustainable future

### RESTORATION FOR A SUSTAINABLE FUTURE

Sustaining the health and interests of people and the planet is now a global baseline expectation occurring in conjunction with increased investment in digital traceability. We need to ensure that we can communicate and provide the evidence needed to verify our sustainability story to discerning consumers in high value markets.

### SUSTAINING AND DEVELOPING NEW ZEALAND'S SCIENTIFIC KNOWLEDGE

Making changes on-farm will achieve some gains but will not provide the level of flexibility needed to successfully meet many of the disruptive challenges on the horizon.

New Zealand's Food and Fibre Sector businesses and institutions already house substantial scientific expertise. They represent critical core capabilities which have historically been geared to traditional production systems, but which can be applied to further the development of modern foods.

### PARTNERSHIP – INTEGRATION - COLLABORATION

Bringing together the collective strengths of our natural food system, Māori agri-industry, and science and research teams within a :WELL\_NZ framing, alongside an awareness of our new

global consumer, places New Zealand in a unique position to claim a "wellness" position in the market.

Building the case for transition and transformation to enduring, success is ambitious. Te Puna Whakaaronui's work will focus on enhancing and developing:

- a partnership process;
- production systems, bioavailability and nutrition;
- the sustainability of our food system;
- the potential for widespread bioprospecting; and
- our existing scientific and business expertise to develop globally valuable intellectual property, capabilities, and wellbeing related solutions.

## Enhance :WELL\_NZ

To inform Sector business continuity and resilience planning in a complex global market, we have framed on-farm changes, research and global trends as **ENHANCE:WELL\_NZ**. In this section we describe how consumer market segmentation is now stratified according to specific preferences, including: values; dietary needs; production impacts on the environment; climate change; population; and a desire for increased physical and mental health from food. We look at where the opportunities may lie for New Zealand.

Adaptability has been key to New Zealand farming success in the past and will continue to be so in the future. We know enough for the Sector to begin to take action. Sustainable, planet-positive production systems are going to be critical for our future.

### DEVELOPING OUR EXISTING NATURAL FARM SYSTEMS

Our natural food production systems are well positioned to evolve and succeed, although they will not be able to do this on their own. Continued success requires change across our economy and throughout the value chain. We must embrace the best of our two knowledge systems to create competitive advantage in global markets – science and mātaurangi Māori. The three main areas of change include:

1. on-farm system evolution that improves environmental sustainability;
2. value chain positioning; and
3. novel natural products with health benefits.

The :WELL\_NZ framing of the future Sector is designed to recognise the additional benefit of a nutritious natural food system. It recognises the impact food has on building, maintaining and restoring physical and mental health. New Zealand's quality, natural nutrient rich foods are perfect for this. Global, and New Zealand-led, scientific research is supporting a deeper understanding of the science underpinning the role of food and nutrition in supporting and improving physical and mental health.

This future food system would include products in their natural state, native foods, fermented, prebiotics, probiotics, concentrated vitamins, and natural fortified processed foods with potential health benefits. We can transition our food system from a provider of products to a provider of solutions.

### MAINTAINING COMPETITIVE SUSTAINABILITY

The Sector has made significant in-roads into environmental sustainability. However, our trading partners continue to raise their minimum requirement standards, and to remain competitive, we must too. Supporting our farmers with additional tools and capabilities to become fully sustainable, productive and resilient will need to be an ongoing focus for government and sector agencies.

## VALUE CHAIN POSITIONING

Growing nutritious food within a sustainable production system that can underpin a **:WELL\_NZ** framing is not enough; we must change our relationships with our value chain and customers.

New Zealand will never produce enough natural foods to dominate a food category, we don't have the space, climate or topography to compete at scale. For these reasons we have tried to distinguish ourselves on reliability and our county's reputation for safe, quality food. Targeting products to consumers who are both willing-and-able to pay a premium will be essential for our overall success.

New markets are complex. Success will depend on applying traditional marketing principles: understanding, targeting and communicating with consumer groups. Sustainability and nutrition are common themes throughout many of these descriptors.

## NOVEL NATURAL PRODUCTS -THE OPPORTUNITY

New Zealand produces many high-quality ingredients, consumer and animal products. However, considering what we produce through a **:WELL\_NZ** framing reveals greater opportunity. Growing and producing compounds that can improve a food's nutritional value has the potential to enhance the consumer's physical and mental health. It is a growing sector in which New Zealand can capture an early market share. How New Zealand develops and realises the potential benefits from this opportunity will need to be determined within a partnership that ensures appropriate use and acknowledgement of New Zealand's natural environment.

The New Zealand natural health product (NHP) industry has grown rapidly in recent years, and products based on medicinal plants in particular ("herbal medicines"), have benefited from increased popularity and global sales. Bioprospecting, the exploration of natural sources for molecules, biochemical and genetic information to develop into commercially valuable products, is an opportunity yet to be realised for New Zealand.

There are known exotic and native plant species with physical and mental health benefits that generate good economic returns. Developing these products has been difficult to scale in New Zealand, further research is needed to develop grow alternative manufacturing technologies. Creating a leading position could open New Zealand farmers up to new production options and future economic gains.

## SYNERGIES FOR MARINE AND LAND-BASED FOOD SYSTEMS

Our oceans are a significant natural asset. The size, breadth of habitat and depth of water within our Exclusive Economic Zone (EEZ) offers economic opportunities that can enhance

our wider food ecosystem, help mitigate on-land carbon emissions as well as generate financial returns for the nation. Our marine environment offers significant opportunities to sequester carbon.

As with our land-based systems, our oceans have well established food producing industries recognised around the world for delivering high quality and safe protein. Both our wild fisheries and aquaculture systems continue to achieve efficiency and productivity gains. The greatest additional protein opportunities are in the form of seaweeds and open ocean aquaculture.

Aquaculture can produce products highly valued in land-based systems. Seaweeds are a rich nutrient source, and many have a long history of use in both human and animal diets. They are also a source of nutrients for horticulture in a liquid form and have biomedical applications. Innovation in the seaweed industry will need coordination and drive to align activities. Given the scale of the opportunity and the relatively under-developed state of our marine environment "right now" is a very unique time. Enhancing our position for marine carbon off-sets now is important if we are to maximise the economic value for New Zealand.

## SUMMARY

The global protein mass-market it is not an arena New Zealand can compete in. There is no "silver bullet" product that we can grow at scale. The opportunity to enhance our existing system lies in growing the best, most nutritious natural foods that we can and, at the same time, looking for nutritional compounds to add value to both natural foods and precision fermented foods.

Our competitors are investing and taking positions to adapt to global food system and technological change - New Zealand should be too.

## Create **:WELL\_NZ**

The continued development of our natural food system must not come at the exclusion of New Zealand's participation in the fast and accelerating world of modern foods. **:WELL\_NZ** defines plant-based, fermented and lab-grown products as modern foods, they share the common characteristic of a high level of technology use in their production. Modern foods present New Zealand with significant opportunities to participate in the food revolution over the coming decades.

Globally, food producing nations have made significant inroads to the alternative protein market, a breadth of technologies have been adopted and there are several novel products under development. We are already 3-5 years behind in some product classes and do not have the resources to compete in many of these categories.



Understanding where New Zealand can compete and create long-term value is critical. CREATE: Well\_NZ recognises this landscape and focuses on market segments that are yet to be fully defined or won.

Creating proteins, compounds and enzymes is relatively easy with modern technologies – turning them into valuable consumer products is more challenging. We have a strong capability platform with some of the best scientists and food expertise in the world; a critical resource to create the competitive advantage we need to build a modern food system in New Zealand.

## Novel Nutritional Products, Bioavailability and IP

There is growing global demand for healthy products and natural supplements in the pursuit of better immunity, health and wellbeing. New Zealand can capitalise on: personal nutrition; therapeutic plant derivatives; and precision fermentation.

## Leveraging personalised nutrition

Personalised nutrition represents a growing market segment globally. New Zealand has huge potential to produce superfoods in abundance, products to support everything from gut health, medicinal remedies, fitness and wellbeing, to highly personalised nutritional products. The global market is lucrative with significant opportunities for New Zealand to seize, to both enhance our Sector, as well as embed wellbeing into the foods we produce.

## Specialist nutritional opportunities for New Zealand

In the future, consumers will want their nutrients to disclose provenance and scientific credentials. New Zealand has a developed a food story, however, we need to do more work verifying the underpinning science, particularly for nutritional products, if we are to provide consumers with the confidence they will demand. There are some exciting areas for New Zealand to explore. When combined with technologies like gene home test kits that collect specialised data (DNA, blood nutrient levels, gut microbiome levels), New Zealand could begin to develop leading IP and world class technology platforms that support better physical and mental health via food and nutrition<sup>19</sup>.

The opportunity will grow as modern foods like precision fermented compounds and foods come online and become a more accepted fixture of global food supply. These foods currently lack the nutritional density of traditionally grown plants and animal products. Creating foods that blend natural and modern produce (with nutritional/bioavailable qualities) offers New Zealand the “first mover” advantage. It can bring to market novel products that are unique in the global food system.

New Zealand now has an opportunity to identify and secure strategic assets (including IP), and expertise to commercially develop this sector. New Zealand aspires to build a productive, sustainable, and inclusive economy, featuring high wages and low emissions. This aim will only be realised through early adoption of, and long-term commitment to, developing and funding a well-designed and broadly supported strategic approach.

## Summary

New Zealand is already behind other nations in the alternative protein market. However, we are developing expertise in biotech, food nutrition, proteins and nutrient bioavailability. Nutritional, healthcare supplements, as well as healthy whole food and functional food and drink are opportunities to explore. Understanding where New Zealand can compete and create long-term value is critical.

The supporting technology industry that builds our new modern food ecosystem has the potential to employ New Zealanders in high value jobs and to become a highly skilled work force. New Zealand aspires to build a productive, sustainable, and inclusive

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economy, featuring high wages and low emissions. This aim will only be realised through early adoption of, and long-term commitment to, developing and funding a well-designed and broadly supported strategic approach.

## Maximise :WELL\_NZ

New Zealand has the potential to develop natural, blended and advanced food products, to deliver physical and mental health solutions to the world, and to create a vibrant economy for the benefit of all New Zealanders. The Food and Fibre Sector will need to move quickly to maximise the opportunity. There is a significant co-ordination effort required from our agribusinesses alongside financial and commercial sectors, as well as Government, to enable the conditions for national success.

Change across the sector will mean significant investment. But, to maximise financial and community benefits, food sector innovation needs to be effective. Business models will need re-working and entrepreneurs will need a growth environment. Legislation and regulation must enable and support the Sector if it is to maximise investment returns.

## Strategy for success

In the wake of global economic uncertainty and risk, many governments – as well as the wider global economy. With an eye on the future, government and business community investments are being strategically targeted through two channels:

- thriving research, science, innovation, and technology (RSI&T) ecosystems, and
- nationally held asset management and investment schemes to generate national returns and ensure both assets and returns are protected.

New Zealand's immediate and pressing challenge is understanding how to maximise support to mature and expand its highly respected existing pockets of RSI&T capability. Creating a globally recognised ecosystem will accrue valuable benefits in, and for, New Zealand. Increased government and sector investment through the transition period will be needed.

## Reframing the “Who Benefits” paradigm

A feature of “building back” the global economy post-pandemic will be the emergence of new business philosophies and technologies.

The size and scope of consumer networks, and the global digitisation of assets, will afford the opportunity for New Zealand's Food and Fibre sector to harvest value through the supply chain, from farm gate to international plate, in a way that has not been possible before. Producers will be able to redefine who benefits and how they benefit.

Economic transformation and transition to a circular, sustainable economic model requires a long-term strategic view. Developing a collaborative platform for farmers and growers to work with food businesses, sources of capital, leading researchers, technology platform developers, entrepreneurs, and innovative value chain providers will improve the long-term sustainability of New Zealand's food ecosystem. New Zealand as a whole will benefit from a strategic approach that supports Sector and national economic success as well as greater wellbeing for all.

## Capturing the value of our ethical food production

Digitisation has impacted the way business operates at many levels. Technological advancements will soon offer businesses the opportunity to evolve their business models to increase returns and maximise benefits through

digitisation of assets and value chains. This redefinition of how value is created and shared can maximise New Zealand producers' financial returns for the investment made in on-farm production values and quality food standards. The adoption of digitised models offers a once in a generation opportunity to redefine consumer relationships within and across markets.

## Re-inventing business models

Adapting our traditional business models to incorporate exponential models will be a challenge. A collaboration towards shared goals will maximise financial, environmental and social returns for all New Zealanders.

Our larger food companies already have a strong base to build from and will play a pivotal role in the design, and transition to, these new business models. Environmental improvements on-farm or within catchment management systems can be incentivised or rewarded. Farmers, Māori, and local communities will need to be part of a company's redesign process, incentive and reward systems will need support to ensure supplier support and sustainability.

The Food and Fibre Sector's leadership will need support from their value chain partners to embed new business models. However those that succeed will create resilience within their production category and ultimately be in a position to inform and shape future food trends.

## Entrepreneurial energy is needed

There is a new cohort of ambitious entrepreneurs emerging. They seek to build billion-dollar businesses, develop new industries and create global service businesses for the benefit of New Zealand. Ensuring these businesses have access to the resources, experienced advisors, and capabilities to remain onshore will be key to maximising the success of the sector and the wider benefits it can generate.

## Summary

The sustained success of the Food and Fibre Sector relies on building modern, responsive business and innovation models that maximise the work of New Zealand's farmers and growers. Understanding new value capture opportunities, as technology transforms the existing structures, is challenging. There is work to do around business tables outside the farm-gate. A sustainable partnership with Māori, commerce and government is essential.

## :WELL\_NZ Next steps

Food produced in a beautiful and bountiful corner of the world will not be enough to sustain future success in a dynamic operating environment. Farmers, growers, producers and manufacturers need quality data and insightful leadership to enable investment decisions that respond to rapid market movement.

Delivering on the Sector's and Government's Fit for a Better World vision needs:

- partnership with Māori;
- strong relationships with companies and investors to drive production changes;
- government and business to strategically align the science, research, innovation, and technology sector with future food production needs; and
- government and business to support the development and attraction of the necessary expertise.

## Investment now is critical

The Sector has made a start on strategy and action towards sustainability. The pace and scale of change needs to be super-sized through targeted investment in technology and practices.

Current high farm-gate returns are likely to continue in the short-term, although off-set by rising costs. The Sector has the resource to invest now – the opportunity to refocus production systems is short-lived.

Our competitors are increasing investment, but New Zealand's companies have been slower to shift investment towards future foods and are falling further behind.

## Kotahitanga

Nationwide cross-sector collaboration will bring about the pace and scale of production the future will demand. We must assess our options, make deliberate decisions and act - soon. We need: a value chain debate, to unleash the first movers and align science, investment, capability and infrastructure development.

There are some tough topics we need to explore as a country. Genetic engineering and the potential use of CRISPR technology must be discussed.

**:WELL\_NZ** is a call to action, for the Sector, Māori, business and government. New Zealand's future – the health and wealth of all our people – is a collective responsibility. Transforming the sector will need all our agile thinkers at the table.



## Te Puna Whakaaronui's Proposition

**:WELL\_NZ** proposes a deliberate focus on the rapidly growing global wellness market and a differentiation of our foods and products from those of other countries. The broad parameters of **:WELL\_NZ** defines four focus areas:

**SUSTAIN:WELL\_NZ** – recognition of Māori's special role within the Sector, and importance of the Sector to New Zealand's economic future.

**ENHANCE:WELL\_NZ** – a framing to evolve our existing natural farming systems to become more sustainable and resilient in what they do, while being better targeted to consumers who are likely to seek natural foods that meet their needs.

**CREATE:WELL\_NZ** – a framing to develop complementary modern food capabilities that can be used to further fortify our natural foods, develop compounds, enzymes, novel and personalised wellness products.

**MAXIMISE:WELL\_NZ** – highlights the importance of RSI&T capabilities and the opportunities within our current ecosystem to create greater value, and new technology enabled opportunities to capture a larger share of the end value of our food system.

New Zealand's natural food sector has a bright future if we apply our collective knowledge to determine a course of action and execute the resulting plan. Discussions will have to include actions for: on-farm practices and systems, value chain design, the technologies we use and our business models to ensure we capture our share of the benefits.

**:WELL\_NZ** is the first in a series of four reports to be published in 2022. A focused report on the direction of alternative protein development will consider the potential disruption for New Zealand. Further reports will consider specialist topics that investigate opportunities for long term Sector success.

### Making haste is essential

Although our natural food systems are experiencing record financial returns, this is time limited, input cost pressures are already rising. Looking beyond the current business cycle and securing future success will take courageous leadership now. We have the expertise, capabilities, and knowledge to create scenarios and options to take the Sector forward.

In contrast, our fledgling modern foods sector, has nearly unlimited opportunity – but with very limited resources. Our global competitors have made advances and New Zealand must work harder and smarter to create an advantage, through a progressive step change in technological uptake and development and/or new product development.

The modern food ecosystem is complex, but we need to become comfortable with experimenting to build depth in our knowledge and capability. Leaders must gain confidence to experiment, evaluate and reposition.

Technological advances will allow us to redefine our food system for the first time in our history. Our challenge is to move quickly before we lose the advantage. Broad and deep sector, and cross-sector, discussion and engagement on opportunities is our next step. Te Puna Whakaaronui will progress industry and sector input to a sustainable food production ecosystem and publish a progress report by the end of 2022.

**:WELL\_NZ** is the start of the transformation conversation.

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**Te Puna Whakaaronui is New Zealand's first fully independent, government funded, primary sector think tank tasked to provide insights and thought leadership to support the transformation of the Food and Fibre Sector.**

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