THE MANAWATŪ REGIONAL FOOD STRATEGY

SUSTAINABLE NUTRITION //
MAY 2025

CEDA
CENTRAL ECONOMIC DEVELOPMENT AGENCY

MANAWATU DISTRICT COUNCIL

PALMY
PAPAIOEA
PALMERSTON NORTH CITY

TE MAURI O MANAWATŪ

OUR VALUE PROPOSITION

At the heart of our Manawatū Food Strategy is the way we work together to create a secure and resilient food system that nurtures the entire community's wellbeing, empowering producers, and fostering sustainable food systems. Through collaboration, innovation, and inclusivity, we will produce a thriving and resilient food ecosystem that contributes to the New Zealand Food Story and celebrates our region's unique agricultural heritage while ensuring food security and promoting the well-being of our people. Through strategic partnerships, science and education excellence, and conscious consumption, we aspire to build a future where everyone has access to safe, nutritious, and culturally diverse food, while safeguarding our environment for generations to come.

THE PURPOSE OF THE MANAWATŪ REGIONAL FOOD STRATEGY

The Manawatū region has a long and proud history as a centre for food innovation and science with a number of breakthrough findings in food and agritech dating back over 100 years. This depth of science and innovation, coupled with our rich natural resources means that Manawatū is well positioned to continue its major role in the evolving food story for Aotearoa New Zealand. To enable that to happen, Palmerston North City Council (PNCC), Manawatū District Council (MDC) and the Central Economic Development Agency (CEDA) have worked with stakeholders and partners across the agrifood landscape and beyond, to produce this food strategy with the intention of setting a shared vision for the region, and to give the sector and potential investors the confidence that the future for food and agriculture in Manawatū is bright.

From field, through to production and consumption, food is a broad ecosystem. The key players including researchers, innovators, farmers, manufacturers, processors, distributors, marketers, retailers, and consumers in the food story of Manawatū can be guided by this strategy as they plot their own path. The Manawatū Regional Food Strategy can help inform and align those plans to give the region a well-connected critical mass for success.

EXECUTIVE SUMMARY

Manawatū as a region has some unique opportunities in relation to food which do not exist elsewhere in Aotearoa New Zealand, or in very few other places in the world.

These opportunities are linked to the world class science and innovation capability that already exists here, and the potential to leverage that capability within the region to sustainably grow and flourish. The fundamental growing conditions in the region (weather, soil etc), and the region's unique central North Island location, and with the region being one of three key nodes in New Zealand's distribution and logistics network, it is perfectly aligned to leverage investment and growth in the short, medium and long term.

The Manawatū Regional Food Strategy has identified a core unifying concept of **Sustainable Nutrition**. This was identified through extensive interviews of key sector stakeholders, partners, and through desktop reviews of key documents and data. Sustainable Nutrition, in the context of this strategy, means fulfilling the needs of current generations while enhancing the ability for future generations to continue meeting their needs from the field to the consumer (local, domestic and export). This includes sustainable production and health-sustaining food. Sustainable Nutrition captures all the players in the food value web including farmers and growers, processors, logistics, infrastructure, distributors, retailers, consumers, scientists, and researchers. The food value web[1] outlined by KPMG in 2018 differs from the traditional concept of a lineal value chain in that it is a "more complex value web that is built around satisfying the needs of a consumer".

These strategic priorities will help shape the action plan that follows to bring the Manawatū Regional Food Strategy to life.

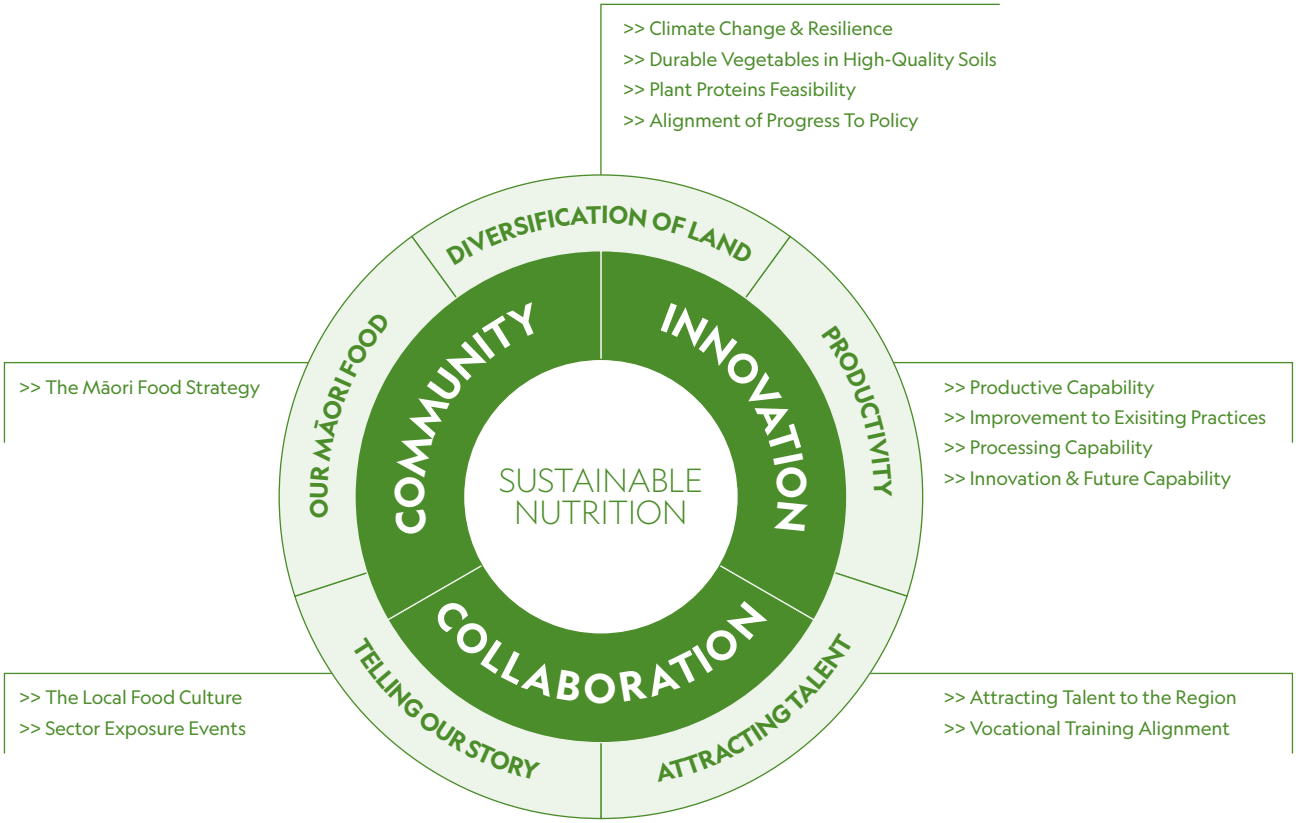
1 assets.kpmg.com/content/dam/kpmg/nz/pdf/June/AgriAgendav5.pdf

THE NEAR, MEDIUM AND LONG TERM

To align with the focus of sustainable nutrition, the Manawatū Regional Food Strategy identifies opportunities for each part of the value chain - from research, through production, to consumer. Growth opportunities are discussed in more detail in the strategy, and the diagram below (Figure 1) presents a high-level summary of the Manawatū Regional Food Strategy.

Workstreams opportunities are largely yet to be defined. An action under the strategy implementation plan will be to better understand what those opportunities might look like.

Figure 1: Summary of the Manawatū Regional Food Strategy



Opportunities exist for food in relation to local (within 200km), domestic (New Zealand) and international consumers via export. However, in order for these opportunities to be realised, a number of components of the wider value chain need to be enhanced by improvements to existing regional capabilities or the introduction of new products, processes, or market opportunities to the region. This concept is explored throughout this strategy as well as other key regional strategies and projects including the Destination Management Plan and the ongoing development of Te Utanganui.

THE OVERALL FOCUS FOR THIS FOOD STRATEGY IS 'SUSTAINABLE NUTRITION'.

In order to identify opportunities to progress the Manawatū Regional Food Strategy and the agrifood sector in Manawatū, a number of people within the industry were interviewed to get their perspective, and key resources and websites were reviewed. The interviews were with people with a range of experience and expertise both within the region and the broader industry. The focus on **Sustainable Nutrition** came through clearly from a number of interviews and is supported over a breadth of sector documents.

In the heart of this Regional Strategy lies collaboration, innovation, and inclusivity. Together, we are building a thriving food ecosystem, contributing to the New Zealand food story.

Through strategic partnerships, education excellence, and conscious consumption, Manawatū aspires to provide safe, nutritious, and diverse food while safeguarding our environment for generations to come.

The Manawatū Regional Food Strategy is built around three core themes, five focused workstreams, and a roadmap of 13 key priorities over its timeline.

THREE OVERARCHING THEMES

The strategy is guided by enduring themes that emphasise sustainability, innovation, and community well-being, ensuring the region's food system thrives in the long term.

These are:

>> INNOVATION — Strengthen regional innovation capability, integrating research and development.

The innovation capability, and in particular the food innovation capability in Manawatū is significant and within New Zealand it is considered alongside other prominent food innovation centres across the globe including Cork and Wageningen. However, opportunities exist to increase collaboration, and in particular for further integration into the region with regard to local, domestic or export food production. There are also opportunities to increase the visibility of innovation at a local, national and global level, further developing the research strengths, through increasing coordination and collaboration. Top international students and highly skilled talent across the sector would potentially be attracted to the region resulting in a high level of integration of research and development with all other aspects of the food value web, in particular the productive capability of the region.

>> COLLABORATION — Facilitate collaboration across the New Zealand food innovation ecosystem.

An opportunity exists for an entity to work with the New Zealand food innovation ecosystem to play a clear coordination and facilitation role not just for Manawatū, but right across the country. The draft Food and Beverage Industry Transformation Plan (MPI, Dec 2022[2]) highlighted a number of areas that a single entity based in Manawatū, with a national remit, could bring to life. The Rural Innovation Lab[3] that supports farmers and growers to experiment with technology and innovation could provide an excellent link between this entity and the rural community and growers.

>> COMMUNITY — Utilise Manawatū's expertise in food production for education and training.

The skills and capability within Manawatū in both food production and processing could be more effectively utilised beyond research and development within knowledge exchange networks to provide education, information and training across the broader industry within the region, and more broadly across Aotearoa, to further develop and refine a world-leading agrifood industry in the region.

2 www.mpi.govt.nz/dmsdocument/54505-Food-and-Beverage-Draft-Industry-Transformation-Plan

3 ruralinnovationlab.nz

FIVE WORKSTREAMS

To achieve these goals, the strategy is divided into five targeted workstreams, each addressing a different aspect of the food system, from production to distribution and consumption.

These are:

- >> DIVERSIFICATION OF LAND
- >> PRODUCTIVITY
- >> ATTRACTING TALENT
- >> TELLING OUR STORY
- >> OUR MĀORI FOOD

13 PRIORITIES

Across multiple timelines or horizons, the strategy outlines 13 priorities, each aligned with one of the five workstreams. Every priority represents a project or initiative that helps drive the region toward its long-term vision for a resilient and thriving food system.

These are:

DIVERSIFICATION OF LAND

- >> Climate Change & Resilience
- >> Durable Vegetables in High-Quality Soils
- >> Plant Proteins Feasibility
- >> Alignment of Progress To Policy

PRODUCTIVITY

- >> Productive Capability
- >> Existing Farm Practices
- >> Processing Capability
- >> Innovation & Future Capability

ATTRACTING TALENT

- >> Attracting Talent to the Region
- >> Vocational Training Alignment

TELLING OUR STORY

- >> The Local Food Culture
- >> Sector Exposure Events

OUR MĀORI FOOD

- >> The Māori Food Strategy

IMPLEMENTATION APPROACH

A number of these priorities align with the actions within the government's Draft Food and Beverage Industry Transformation Plan 2022.

The success of the Manawatū Regional Food Strategy relies on a focused Implementation Plan. This project-based approach, built into the five defined workstreams, must align with key central and local government initiatives to secure commitment and buy-in from commercial businesses. Achieving success depends on key doers and partners, with the strategy being executed through a coordinated, collaborative, and focused approach.

BACKGROUND

The Manawatū Regional Food Strategy was commissioned in 2021 and was completed over two stages.

Stage One outlined the region's leading position in innovation, and as a magnet for business development. It focused on four key areas of work:

>> Strengthening the breeding ground in the region itself. It identified talent, innovation, business development and business climate as needing a focus and outlined some actions related to these.

>> It identified the need for close cooperation between stakeholders to create the collective strength and a successful ecosystem.

>> It identified the need for Manawatū to have close links to other parts of the country.

>> It proposed a membership model of the key stakeholders to foster the transformation from a knowledge hub to an innovation centre.

The initial strategy work suggested that "*given the major challenges facing the food system, the region's leading position offers many opportunities, but this will not happen in isolation. It requires excellent cooperation between the key players in the system, with an openness to other actors who want to participate*". It identified further work was required to develop the innovation, organisation, governance and financing of a Food Strategy with a significant recommendation being the establishment of a Membership based organisation for the sector.

Stage One also outlined how important the agri-food sector is to New Zealand and the region in terms of sectors, subsectors, contribution to GDP and regional employment (Table 1).

Table 1: Regional Economic Profile for Manawatū for key sectors related to food.
Source: https://ecoprofile.infometrics.co.nz/Manawatu

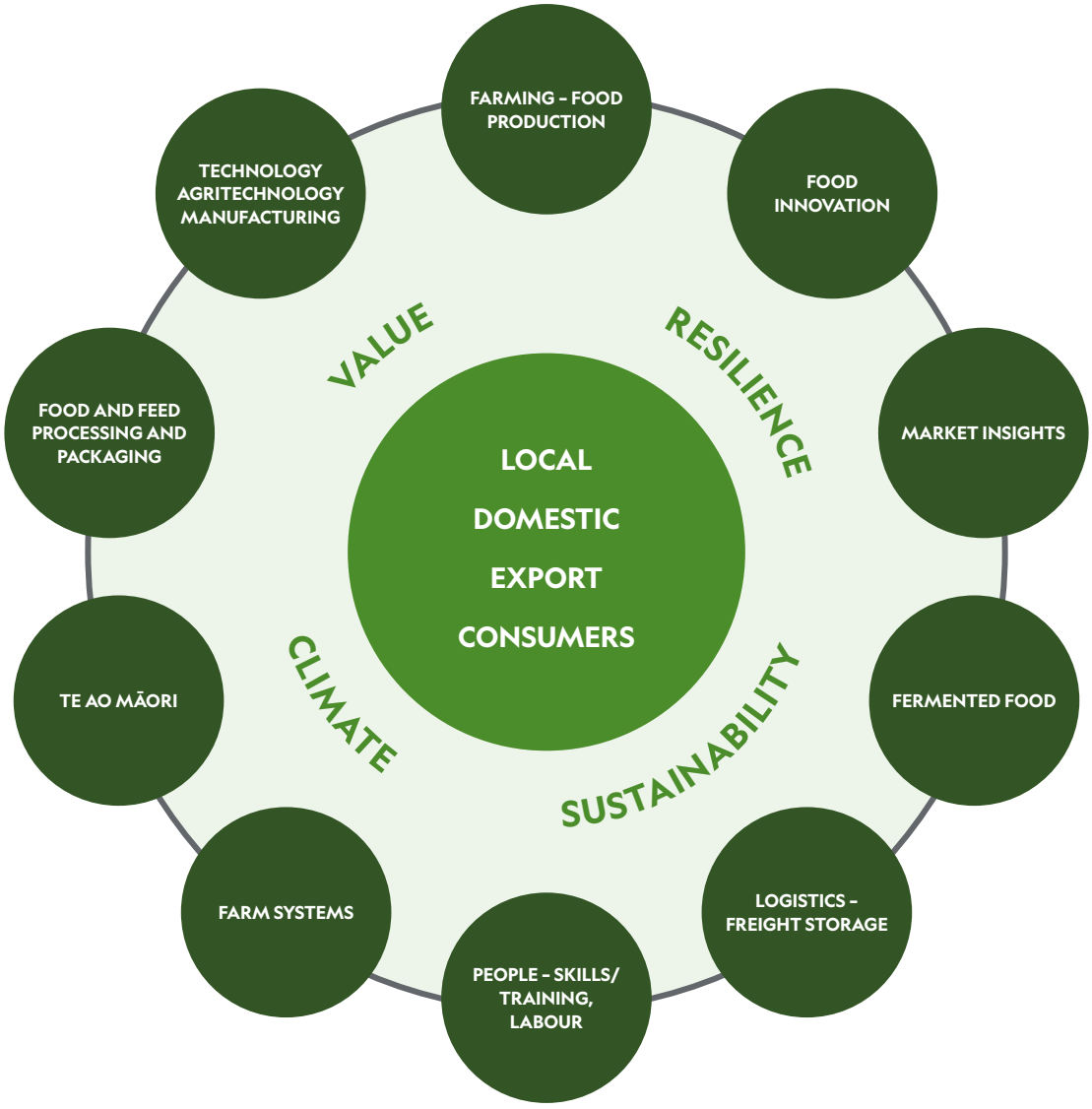
	Industry	% regional GDP	% of NZ GDP	% of regional jobs	% share of NZ jobs
Agriculture, Forestry and Fishing	Horticulture & Fruit Growing	0.21%	0.47%	0.4%	1.0%
	Sheep, Beef Cattle & Grain Farming	1.49%	1.05%	1.5%	1.2%
	Dairy cattle Farming	1.87%	1.98%	1.3%	1.4%
	Poultry, Deer & Other Livestock Farming	0.13%	0.14%	0.3%	0.3%
	Aquaculture	0.00%	0.03%	0.0%	0.0%
	Fishing	0.02%	0.12%	0.0%	0.1%
	Agric Support Services & Hunting	0.56%	0.80%	0.7%	0.6%
	Meat & Meat Product Manufacturing	0.81%	0.72%	1.1%	1.0%
	Seafood Processing	0.07%	0.15%	0.1%	0.2%
	Dairy Product Manufacturing	0.46%	0.55%	0.7%	0.5%
	Fruit, Cereal & Other Food Product Manu	0.47%	0.80%	0.8%	1.1%
	Beverage Manu*	0.01%	0.79%	0.0%	0.3%
Professional, scientific and technical services	Scientific Research Services	1.2%	0.3%	1.2%	0.3%
	Scientific Testing and Analysis Services	0.1%	0.2%	0.1%	0.2%
Education and training	Technical and vocational training	0.1%	0.2%	0.2%	0.4%
	Higher education	2.4%	0.6%	4.4%	1.4%

Following this, Stage Two was undertaken to develop the strategy document by bringing together the key findings and insights, and extensive engagement with stakeholders and partners across the agrifood landscape and beyond, identifying potential opportunities for Manawatū. In essence Stage One identified some key ingredients for success and unique strengths in the region (the "how") and Stage Two identified what the region should create/focus on with those ingredients and strengths (the "what").

The focus of this strategy is to try and view the opportunities for the region with a consumer or customer focus, and to then challenge the ability for the Manawatū to support this at each point in the food value web, both from a local, national, and global perspective. The work has involved reviewing a wide range of documents and research, interviewing a range of people across the food value web both in the Manawatū and surrounding areas, reviewing successful agrifood developments in New Zealand and internationally, and using this information to look at where and how the region can capture value and/or create value from the food value web.

The diagram below outlines the scope which was considered in the Stage Two work.

Figure 3: Considerations in developing a Food Strategy for the Manawatū



During the interviews conducted for the strategy there was a consistent theme that there are opportunities, and more importantly a strong desire, for sector partners, industries and each part of the value chain to be more closely connected. The concept of the food value web is designed to change the focus of and the operation of the food value chain such that the customer/consumer is the key component and that all parties interrelate to get the best outcomes for each player. The food value web differs from the transactional value chain where each party interacts with the party before and after them in the chain and often has limited understanding of other parts of the chain.

The two diagrams below reflect work done by KPMG[4] and clearly show the difference and how there is potential to ensure only those who add value are part of the food value web and how the web can capture more value to key participants and to a region.

Figure 4: Traditional food value chain

TRADITIONAL VALUE CHAINS WILL NEVER DELIVER ON OUR POTENTIAL

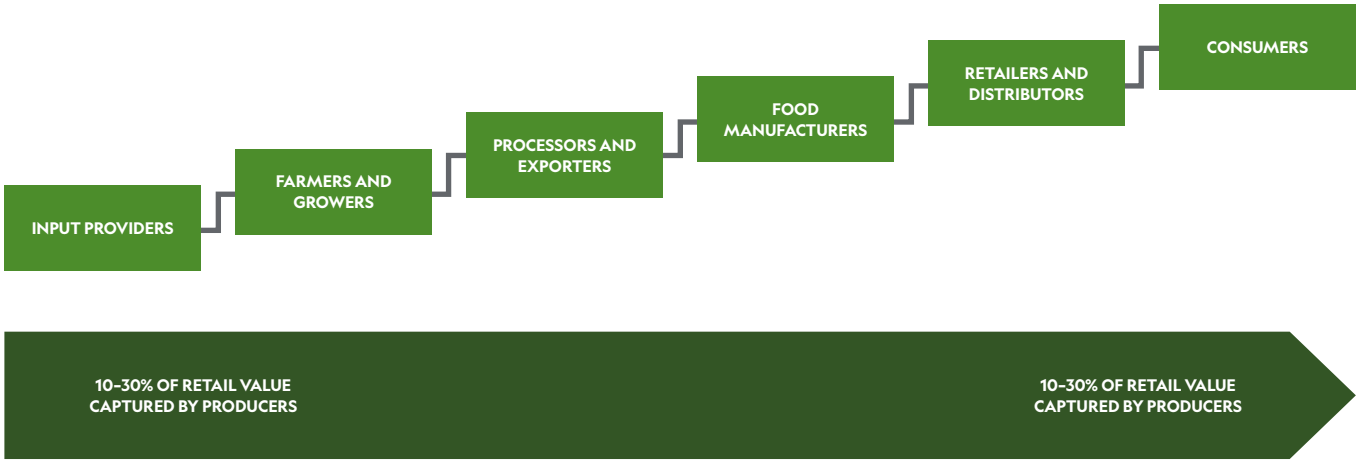
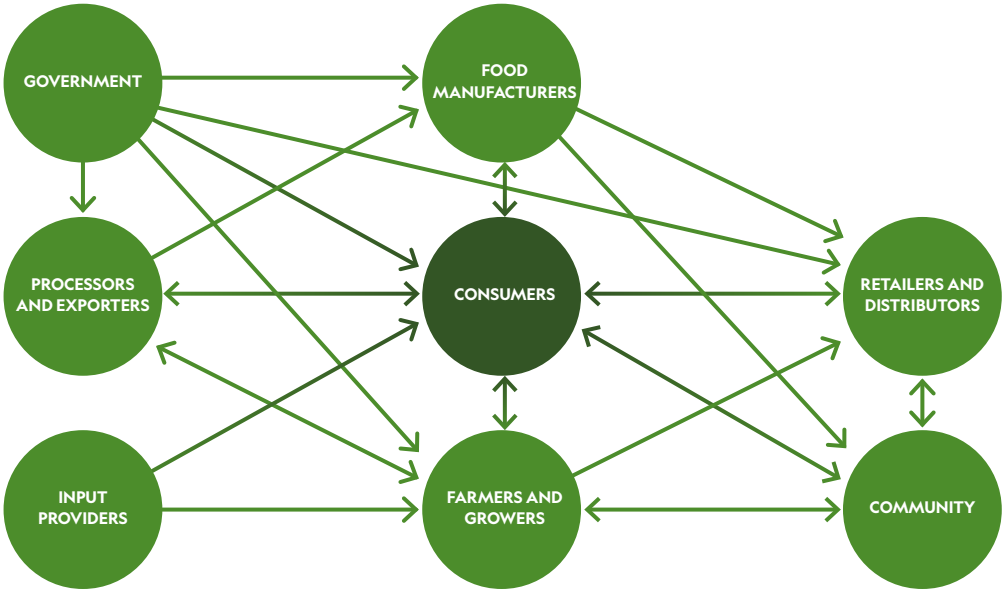


Figure 5: Consumer centric food value web.

ENVISAGING THE FUTURE: A CONSUMER CENTRIC VALUE WEB



4 assets.kpmg.com/content/dam/kpmg/nz/pdf/June/AgriAgendav5.pdf

This strategy reflects on the key drivers of change outlined in *Well_NZ Reframing New Zealand's Food Sector Opportunities*[5] where climate change, consumer preferences and technology are expected to have major impacts.

The strategy has a Sustainable Nutrition central focus and considers food from three perspectives:

>> **Local:** how can the local consumers in the Manawatū, Rangitīkei, Tararua, and Horowhenua regions be supported;

>> **National:** what is Manawatū well positioned to provide in the way of food for the country; and

>> **International:** what is Manawatū well positioned to contribute to international customers and consumers.

It is imperative to the success of the Manawatū Regional Food Strategy that customer/consumer, market insights, logistics (storage and freight), processing and packaging, production, technology adoption and innovation and research are all considered as integral to the wider value chain as there is ability to both capture and create value there. 'Capture value' relates to the ability to extract more value back to the region by changes to business practice or business models and is usually relatively immediately available, whereas 'Create value' relates to developing new products, processes, practices or markets.

As the implementation of the strategy is undertaken, projects under each priority may be categorized as short, medium or long term. The higher impact projects are likely to have multiple phases over a long-term period.

5 fitforabetterworld.org.nz/assets/Te-Puna-Whakaaronui-publications/Reframing-New-Zealands-Food-Sector-Opportunities.pdf

CURRENT STATUS OF FOOD IN MANAWATŪ

CLIMATE AND SOILS

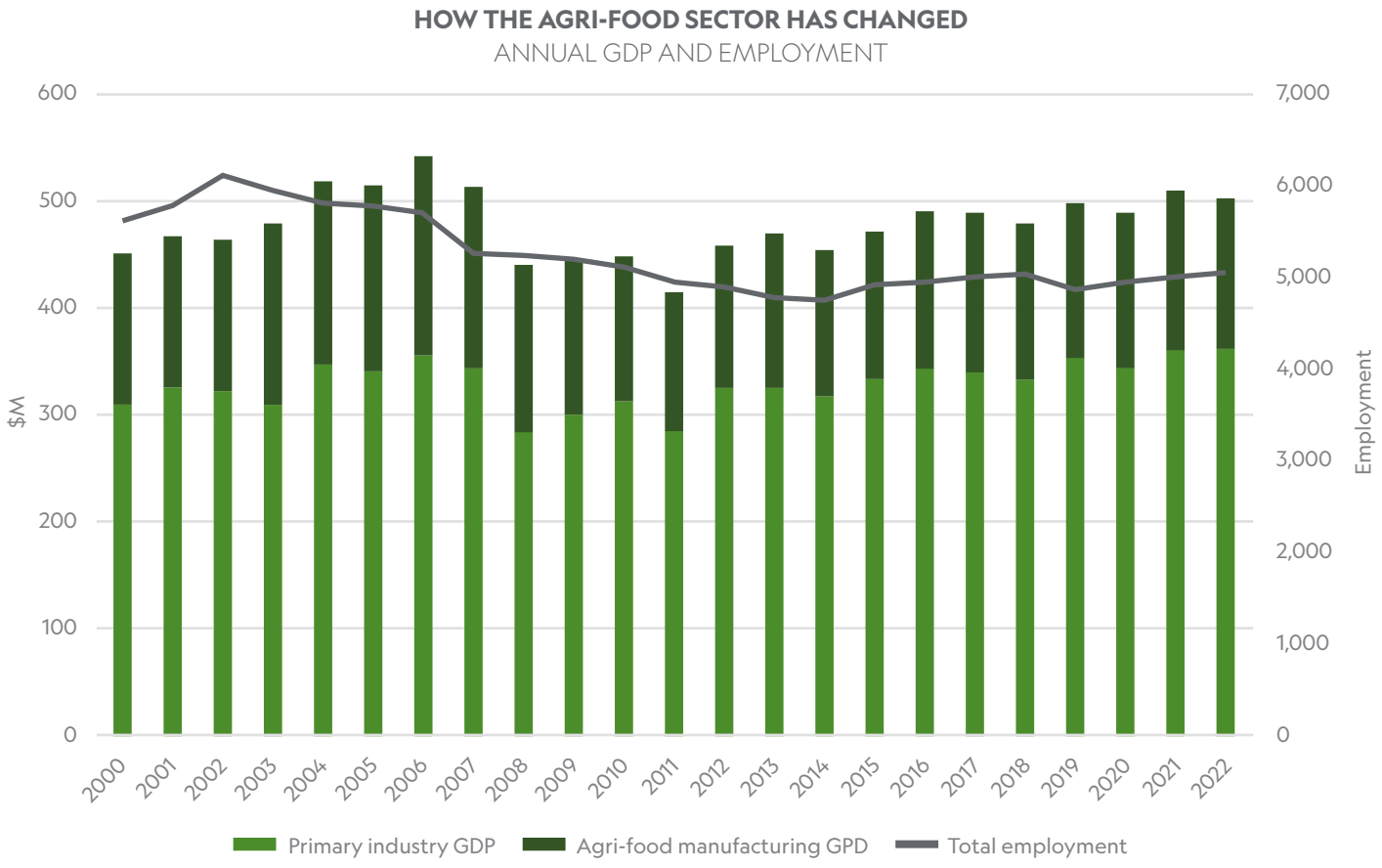
The temperate climate and high-quality soils of the Manawatū region is suited to growing a wide range of species. There are some areas with some soil constraints, such as poor drainage. Not all of the region is represented within S-map - the digital soil map for Aotearoa New Zealand - so the actual area of high-quality soils is not clearly mapped as yet. The requirements for local government to identify and map high class soils as a result of the National Policy Statement on high class soils should help provide this important information.

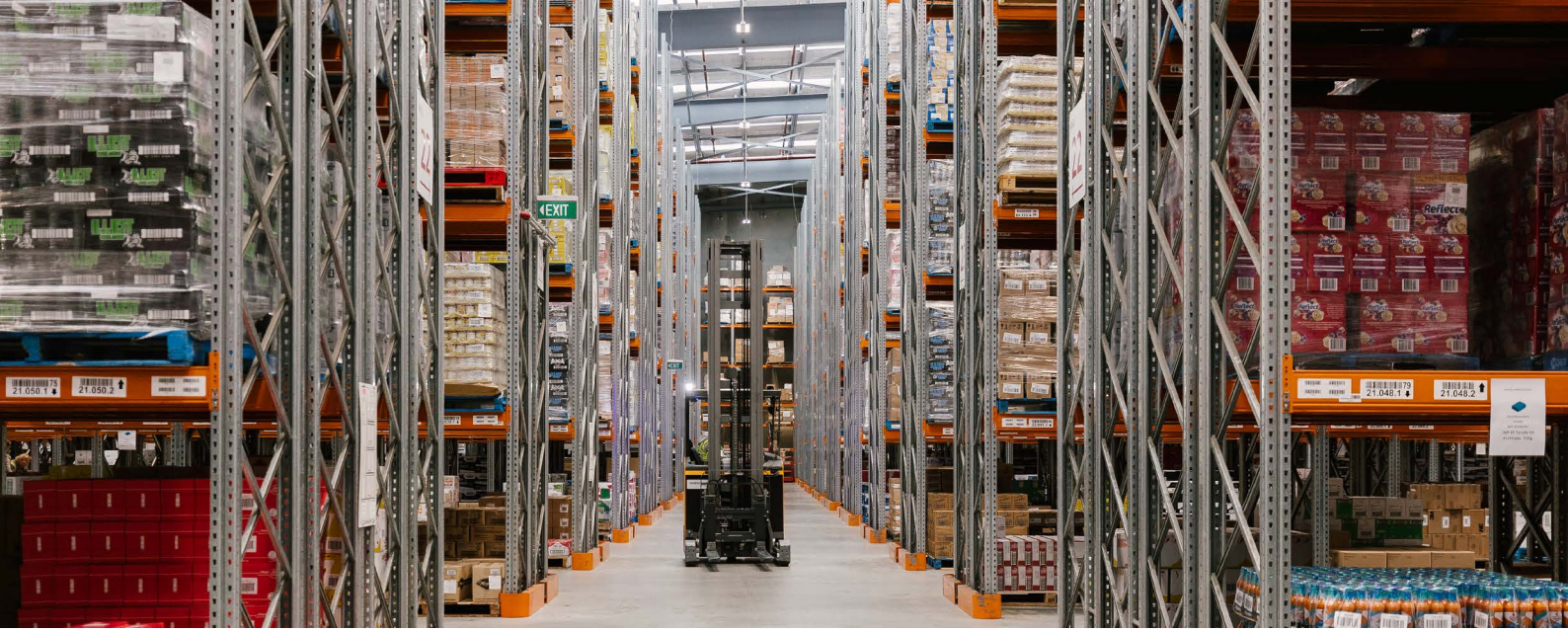
Through the development of the strategy, there was feedback during the interviews in relation to current land related to continuing to deliver quality and value, a future focus, and sustainability. While the climate allows crops to grow, the impact of climate events, particularly rainfall and wind, may limit the viability of growing high-quality crops of many species. Exploring in more detail the potential crops, particularly vegetables, that might be suited to the region's climate and soils would be valuable.

PRODUCTIVITY

The graph below (PNCC 2022) shows the agri-food sector GDP in Manawatū has increased slowly since the 2008 Global Financial Crisis. However, the GDP of food manufacturing remains unchanged, while the number employed in the sector has declined.

Figure 6: Change in GDP and Employment in the Manawatū from 2000-2022.
Source: https://www.infometrics.co.nz/product/regional-economic-profile





At the time of this strategy development, the major contributors are currently the dairy industry with GDP of around $142M, Sheep, beef and arable at $103M GDP, both of which are largely producers of commodity products, while the meat and dairy processing industries account for $79M of the total $141M GDP from food processing. This shows that the predominant land use in the region is pastoral farming with grassland being the predominant land cover. There are small areas of annual arable crops and even smaller areas of horticulture, with horticulture contributing around $15M of GDP. Key arable crops in the region are maize and barley. Vegetable production is predominantly potatoes and some areas of fresh vegetables direct to market or for salad use.

The processing capability in Manawatū is modest with most meat and dairy products processed out of the region. There are two major meat processors with facilities in the region, and all other food processing of any scale occurs in our neighbouring region of Rangitīkei with facilities in Marton or Bulls.

Palmerston North city has the distinct advantage of being central. The development of Te Utanganui[6] (The Central New Zealand Distribution Hub) that leverages off an already established logistics hub including the 24/7 airfreight enabled Palmerston North Airport provides excellent air, rail and road linkages to major population hubs and export ports in the North Island. The new Te Ahu a Turanga – Manawatū Tararua Highway (State Highway Three) will provide much improved access to the east coast for supply of product for processing and export through the Napier Port.

The ability to secure labour in food production and processing is challenging, which isn't unlike many other areas of the country with the exceptions that housing affordability and availability is more favourable in Manawatū and surrounds than in many other main centres and regions. There are also challenges related to the flow of a seasonal workforce.

Manawatū is well catered for with regard to research and science, with more than 3100 scientists and researchers working in the city, and the home of three Crown Research Institutions along with organisations such as Finistere Ventures, Sprout AgriTech, The Factory, Synlait, and FoodPilot – the largest collection of pilot-scale food processing equipment in the southern hemisphere. The region is also the home of FoodHQ, a collaboration of internationally recognised companies, research and educational institutions providing food companies and innovators access to one of the world's leading clusters of food science expertise and facilities, and is where the Riddet Institute is based, alongside the Fonterra Research and Development Centre, one of the largest dairy research facilities in the world, with more than 300 researchers, engineers and scientists from 46 countries, including 130 PhDs.

6 http://www.teutanganui.co.nz

According to the 2021 New Zealand Agritech Insights Report 13% of the 133 agritech companies in New Zealand are located across the Manawatū to Wellington region while Waikato has 16% and Auckland 29%. The report also refers to the strong investment in early stage agritech companies with the Manawatū Investment Group (MIG) ranked third nationally in 2021 with 10 investment in the sector. The region is well positioned both geographically and with deep roots in innovation to grow the agritech sector.

The real strength of the Manawatū should be the R&D capability in food science and other biological sciences. The Manawatū Regional Food Strategy provides significant information on the R&D capability and capacity, and according to research completed by CEDA for Te Utanganui's Strategy there are approximately 20 businesses and 3, 100 science related staff engaged in the agri-food R&D in the broader Massey and Food Science Campus including a number of CRIs, Fonterra and Synlait.

Information received in interviews ranks the Palmerston North based Massey University campus as possibly the third largest in food innovation capacity globally behind Cork and Wageningen. However, a number of parties interviewed indicated they have tried to engage with the science organisations for assistance with research and have sometimes found it difficult to progress initiatives. There appears an opportunity to grow the level of cooperation and collaboration across the wider food sector with the New Zealand research ecosystem to increase opportunities for creative entrepreneurs to further their ideas in a safe environment with suitable funding support. There is also significant opportunity to utilise the skills and knowledge within the broader Massey Campus more effectively in delivering information and outcomes to industry and to provide training to upskill people within the industry.

FUTURE SUSTAINABLE NUTRITION CAPABILITY

A number of factors, within the region, New Zealand, and globally, will impact on the Manawatū Regional Food Strategy.

These include the ability to capture and create value from existing and future products. Capture value is likely to fit within the short term while creating value may be better aligned with medium or long term initiatives.

In developing the strategy, the capability and capacity of the region to produce a range of food products or types of products was considered but the strategy has identified, and discusses in detail, a few that fit with Sustainable Nutrition. The potential for a number of products to be a part of the strategy were considered and discounted for a range of reasons such as scale, sustainability of production, accessibility of markets, climate and no competitive advantage over other regions or countries. These included organics, beverage hub, urban farms, fresh non-durable fruit and vegetables, dairy, high disease risk fruits and vegetables, grain and seed, fermented foods, and cell based agriculture. The Sustainable Nutrition focus of the strategy draws heavily on the R&D capability of the region, particularly for medium and long term opportunities.

WORKSTREAM ONE // **DIVERSIFICATION OF LAND**

CLIMATE CHANGE & RESILIENCE, DURABLE VEGETABLES IN HIGH-QUALITY SOILS, PLANT PROTEINS FEASIBILITY, ALIGNMENT OF PROGRESS TO POLICY.

Implementation of these components of the strategy will require an effective education and support system to help farmers make sustainable land use changes within their existing farms and to ensure they will be resilient to climate change impacts while also being able to capture benefits from carbon credits or reductions in emissions. It will require effective approaches to ensure collaboration operates effectively by identifying outcomes and how parties will benefit. It will help ensure that there is protection and responsible use of high-quality productive land.

CLIMATE CHANGE AND RESILIENCE

In recent years resiliency of food production in New Zealand has been in the forefront of many organisations strategic planning. Zespri has recently released a climate change adaptation plan (November 2022) which contains 41 key actions. A number of these relate to expanding kiwifruit production into new regions, such as in the lower North Island, to protect from climate change and provide more nationwide resilience to extreme local climate events. Action 19, which is due to be undertaken from 2023, "19. Model climate impacts and adaptation in New Zealand and overseas growing regions" is particularly relevant to Manawatū and is supported by work done by Plant & Food Research as part of their Sustainable Land Management and Climate Change (SLMACC[7]) work. This is published as a fact sheet (Climate Change impacts on kiwifruit 2021) showing significant areas in the lower North Island could be suited to kiwifruit as demonstrated by growers emerging in areas such as Whanganui.

However, although climate change will make some northern regions less suited or unsuitable to production of current cultivars of kiwifruit, the Manawatū climate will provide some challenges, particularly wind, and although there are suitable soils some of these areas may be more prone to flooding in the future. Thus, investment in shelter systems, along with low environmental impact growing systems, including irrigation, will be required.

There will be a need to increase infrastructure for kiwifruit including packhouses and cool stores in close proximity to production. Both Te Utanganui (The Central New Zealand Distribution Hub) and the industrial hub in the Manawatū District are well positioned to provide land to meet any future demand, and will have good access to export markets through Te Utanganui.

7 www.plantandfood.com/en-nz/article/climate-change-impacts-on-kiwifruit

Currently there is limited access to skilled on farm labour, but the urban areas provide a good base from which to source labour which could be well linked to other agrifood industries to provide on-going employment most obviously in the in the Manawatū District.

There is opportunity to engage in research to develop sustainable production techniques suited to the region and to understand how production practices impact on the nutritional characteristics of the fruit.

DURABLE VEGETABLES IN HIGH QUALITY SOIL

With urban areas expanding onto highly productive land in many parts of New Zealand and elsewhere in the world, and with climate change impacting the ability to produce high quality vegetables due to temperature excess, water shortages and flooding, it is expected there will be an increased opportunity for vegetable production in suitable areas to provide greater resilience to climatic events and to help ensure food security within New Zealand.

Manawatū has advantages of a relatively stable temperate climate and areas that are not severely impacted by extreme climatic events, so could become an important region for sustainable vegetable production, not only for New Zealand, but potentially water scarce countries in the Asia Pacific. Currently exporting fresh products to Australia is often constrained due to quarantine requirements but as the predicted increase in the population on Australia's Eastern Seaboard and climate change impacts on Australia's current vegetable growing regions, increased demand for imports is expected. Regional vegetable production is mostly potatoes, which are difficult to fit in a sustainable farm system, but other vegetable crops, such as sweetcorn, beans, beetroot and brassicas could well fit a sustainable cropping system. Irrigation will be required for many of these crops which will require diversification of land use for some existing land with irrigation consents or new investment in irrigation to utilise new technologies that optimise water use efficiency that will require partnerships with local government.

To have durable sustainable vegetables within the Sustainable Nutrition focus of the strategy will require development of infrastructure to harvest, pack, store and distribute the products. The proximity of Te Utanganui (the Central New Zealand Distribution Hub) to the Ports of Wellington, Napier, Whanganui, and Taranaki, and the urban populations in Wellington and Auckland are key factors that could help future-proof durable vegetables within the strategy. Currently the labour requirements for fresh vegetable production are significant and it will be important to link labour across a range of food activities and to develop and integrate new automated technologies into vegetable production.

Durable sustainable vegetables would benefit from a coordinated and collaborative research programme that evaluates and selects species and cultivars, develops sustainable production practices utilising new technologies, develops modern labour-saving systems as well as defines the nutritive value of the foods and holds well developed knowledge exchange networks between researchers and the industry, would ensure outcomes are implemented in the best possible agricultural production practices.

PLANT PROTEINS FEASIBILITY

It is expected that plant protein will become a more essential part of the diet if we are to reduce greenhouse gas emissions from agriculture and provide Sustainable Nutrition to people. Manawatū has some unique opportunities in relation to both plant and animal protein as it already has a very strong research capability in protein. Climate change scenarios are expected to provide a climate suited to growing some plant species and currently there are soils suited to producing a range of plants which can be used for either animal or plant protein production. The region could be the processing centre, drawing raw materials from surrounding lower North Island regions with full utilisation of all the raw materials to create high-value nutritious foods. This is similar to the concept Leaft Foods12 are developing for plant protein in Canterbury where they plan to extract protein from plants and the by product is then utilised in animal feeds. Proliant, based in Iowa, USA and in Feilding here in Manawatū is an excellent example of a business that is utilising animal by products to create higher value products and the development of higher value uses for by products from animal processing, such as hides, is a high priority.

In the case of plant proteins, several species with relatively high protein contents could be grown within sustainable farm systems but more work is needed to identify the best options for the region and the market and then develop production and processing capability and capacity. There is no plant processing capability currently. The innovation needs to move beyond the proof of concept at a lab scale to have investment in kitchen labs to pilot plants, which can demonstrate the commercial potential for protein, and ultimately toll processing capability.

ALIGNMENT OF PROGRESS TO POLICY

To ensure success, any advancement of this workstream will need to be consumer market focussed and data driven to determine Manawatū's food production niche. A key platform for success will be creating a culture of collaboration – between farmers, scientists, investors, exporters, marketers, resource and logistics providers, retailers, and consumers, as well as decision and policy makers.

Implementation of all priorities will require a strong commitment from key organisations. It is expected that the research will create intellectual property (IP) and clear processes will be needed to ensure collaboration and appropriate freedoms to operate with IP across the food ecosystem. There will need to have a strong focus on utilising renewable resources and energy and recycling. Investment will be required from both the public and private sources and local government may need to provide a committed resource to ensure there is a central source to foster collaboration, minimise duplication and provide a point of contact for parties wanting to engage with the agrifood ecosystem. CEDA would be a conduit for inward investment, working with local government (PNCC, MDC and HRC) to ensure council support and process best enable investment to occur.

WORKSTREAM TWO // **PRODUCTIVITY**

PRODUCTIVE CAPABILITY, EXISTING FARM PRACTICES, PROCESSING CAPABILITY, INNOVATION & FUTURE CAPABILITY.

PRODUCTIVE CAPABILITY

The recent publicity of egg shortages opens up the development of a circular free range egg system fits with the strategy. The Manawatū and surrounding regions are producing high quality feed grains (maize, barley and wheat) mostly for other than the egg layer industry. Much of this grain leaves the region or is used in the dairy industry. Although it may be relatively easy to supply the cereal grains required for poultry mixes, securing local sources of protein will be more of a challenge. Currently trials with soybean are underway but protein from faba beans may be more reliable if it is economically viable.

Free-range egg growers, eg. The Egg Project, Greaves Goods, and Three Oaks already exist in the region and EG are developing a large farm in our neighbouring region of Rangitīkei. The rural environment where a free-range chicken farm can be isolated from neighbours on suitable soils with potential access to largely local feed sources and a potential North Island market readily accessible from a logistics hub suggests there is opportunity for managed expansion of free-range egg production in Manawatū. This opportunity is further enhanced by the potential to create a circular system with composted chicken manure being used to produce crops to feed the chickens.

The development of a free-range egg industry in the region would benefit from links to the local sustainable food system and to research capability in relation to crop production for feed and the use of new technologies to produce high yields of quality feeds.

IMPROVEMENT TO EXISTING PRACTICES

Both the end product and production processes will benefit from the opportunity to use an ever-increasing range of tools such as automation, robotics, renewable energy, precision bred plants and animals and functional polymers. Conventional farmers will continue to adopt new methods and innovate, our strategy must support the update of modern farming practices. In the future food production in our region may develop increasingly layered production systems or regenerative farms or other methods. The strategy must consider the use of regional science and engineering capability to enhance uptake of new technologies and practices that improve efficiency from paddock through to plate.

PROCESSING CAPABILITY

Traditionally Manawatū has been a major sheep/lamb production and processing region. Many of the key stud breeders were located either in the wider Manawatū or Rangitīkei. The climate and climate extremes mean the area will generally remain suitable for production of good yields of high-quality forage and be suited to raising animals without significant negative impacts on animal welfare. Data from the Beef & Lamb – Lamb Crop Report 2022[8] indicates that approximately 12% of the New Zealand lamb supply is from the southwest of the North Island with 37% of the lamb supply from the lower North Island. A significant proportion is sourced from the Gisborne area where the shifts to forestry will result in less lamb production thus a greater percentage will be from the lower central North Island. New Zealand accounts for 62% of the world lamb exports. There are eight meat processing plants in the wider Manawatū-Whanganui Region and two companies – Ovation and Affco – have plants in Feilding. Much of the lamb processing capability in the lower North Island is projected to be obsolete in the next 10-15 years and additionally animal welfare requirements may mean that acceptance of current transport (long distances in trucks) and processing systems will necessitate significant change to more localised, boutique and specialised processing plants producing products that are not impacted by seasonality of supply.

A complete review of the sheep milk industry was undertaken in 2020, by the Food Innovation Network. New Zealand has recently seen a significant increase in sheep milk production, particularly by Spring Sheep with production expanding from the Waikato into Taranaki over 2022 but transporting milk back to Waikato for processing. The suggested environmental benefits of sheep milking when compared to bovine include reduced risk of nitrate leaching, reduced soil compaction damage, lower methane per litre of milk and better ability to manage pastures. Further work would be needed to confirm some of these benefits. There is significant research capability for bovine milk which would be invaluable to a developing sheep milk industry. There is also potential for the region to develop and utilise world leading genetics for producing sheep milk and high-quality red meat to create high value sheep milk and meat products. Prior to the development of a sheep milk industry in the region, market research would be needed to confirm work already undertaken that shows whether high value markets exist. The region has previously hosted the New Zealand Sheep Milk Conference and has investigated processing for sheep and goat milk processing, however, currently there is limited sheep milk processing capability in the region and no bovine facilities which could be recommissioned for this purpose thus investment in new processing will be required.

The Sustainable Nutrition focus of this strategy envisages using the research capability in the region to develop and manage production systems that ensure the quality of the animal feed from species and cultivars selected for purpose are expressed in both the taste and nutritional characteristics of both the meat and the milk. This productive capability will be able to be linked with new and novel processing systems that capture and create high-value products from both milk and every component of the animal carcass. The regions logistics hub, Te Utanganui, with good connection to export ports, will be important to ensuring high quality resulting products, with provenance and traceability, can be delivered in response to customer and consumer expectations.

Lamb is not the only opportunity for red meat. Beef is currently more versatile than lamb in relation to both supply and product range and it is expected that beef production will be integrally linked to dairy to remove animal welfare concerns with bobby calves. While increases in beef production within core dairy production areas is expected, Manawatū has an opportunity to harness high value beef production and processing and for this to be an important component of the red meat value web in the region.

INNOVATION AND FUTURE CAPABILITY

It is expected that innovation will be critical to the success of lamb, and that the research capability in plant breeding, plant physiology, climate impacts, agritech, animal breeding and performance, animal welfare, farm systems, processing engineering, food processing, nutrition, and data processing will need to be linked with excellent market insights work to capture and create value from novel products. It is also expected that this focus will attract skilled researchers and undergraduate and graduate students to work in the region. It will also require a coordinated and collaborative approach which includes farmers, processors, storage, logistics and researchers and ensures effective knowledge exchange networks are in place. This should provide an excellent ecosystem for start-up businesses developing new and novel technologies, which could be supported by entities such as Sprout Agritech and The Factory. The projected outcome is that up to 20% of the world's export lamb will originate from production or processing capability in the Manawatū, and that the expertise and start-ups will be integral to the sheep milk and red meat industry in New Zealand and other meat producing countries. Subject to markets, there is potential for a significant percentage of New Zealand sheep milk production to be from the region with opportunities for new state of the art processing and related start-up businesses.

8 beeflambnz.com/sites/default/files/data/files/Lamb-Crop-Report-2022.pdf

Our strategy must consider the maintenance and development of existing food production as well as future, yet to be determined, opportunities for Manawatū to grow the volume and value of food produced in the region. Our science capability can be applied to climate change resilience and yield security as well as dense nutritional food production. Leveraging rapidly changing scientific developments in adjacent technology changes and the flow-on resources they will produce, such as future energy systems, securing nutrient input, artificial intelligence, alternative protein and enzyme systems, remote sensing in food production and value add manufacturing can potentially produce real economic gains.

A clear understanding of the unique natural resources and productive capability of Manawatū and wider New Zealand will allow us to maximise the development of unique food production opportunities presented by new and existing research capabilities. In addition, ensuring our own regional research and development programme do not replicate the work of other national or international programmes will support the identification of unique products. For example, developments in cellular agricultural and cultured food production are well underway overseas, monitoring progress for discrete opportunities could be included in the Manawatū implementation plan with a clear focus on research opportunities that can create competitive advantage here in New Zealand.

Developments in plant and animal species management, particularly to target climate resilience and increase the nutritional quality of food products, is an area the strategy will focus on over the long term. Manawatū capability in research and development can synthesise the unique characteristics of both animals and plants into food products that meet consumer demands in a rapidly increasing personal nutrition and wellbeing market. This strategy can build on a solid platform developed by the High Value Nutrition Science Challenge.[9] Developments in areas such as nutraceuticals, bioprospecting, germplasm and biotechnology may offer future growth opportunities.

Long term viability of this priority will require a collaborative research environment that removes competition for funding and protects IP for New Zealand Inc. Any future agrifood innovation hub would have to consider both a shared facility and shared services model. In addition, the long-term strategy outcome must examine how to streamline the injection of capital funding into start-ups, through funding rounds to bring product to market as well as into existing food production business growth. Articulating opportunities to commercial funders and developing flexible funding models that are attractive to private enterprise, as well as ensuring deep understanding of regional need with local and central government, are critical.

9 www.highvaluenutrition.co.nz

WORKSTREAM THREE // **ATTRACTING TALENT**

ATTRACTING TALENT TO THE REGION, VOCATIONAL TRAINING ALIGNMENT.

ATTRACTING TALENT TO THE REGION

This strategy provides significant opportunity for start-ups in the agrifood sector, and it is important to provide the ecosystem for these start-ups to establish themselves within Manawatū. The presence of a vibrant hub with collective business, innovation and pilot plant support means start-ups would be nurtured and remain in, or relocate to, the region rather than moving to other to centres, potentially leveraging off what is already in place. The Manawatū - Whanganui Regional Skills Leadership Group has been established by the Ministry of Business, Innovation and Employment (MBIE) as part of the review of vocational education. This entity should be able to help understand and support the development of the vocational work force for production, processing and logistics. The ability to provide year-round employment across the agrifood industry needs to be carefully considered as the strategy is implemented. Cheaper cost of living than some main centres should encourage people to live and work in the region.

VOCATIONAL TRAINING ALIGNMENT

There appears to be potential to further attract both international students and international researchers to Manawatū. A well-coordinated strategy will bring students into both undergraduate and post graduate studies that are aligned with the broader sector objectives and then retain these skilled people within businesses.

A strong performing science ecosystem based around the Massey Campus should attract international and domestic undergraduate and post graduate students and attract and retain talent within the relevant science organisations.

WORKSTREAM FOUR // **TELLING OUR STORY**

THE LOCAL FOOD CULTURE, SECTOR EXPOSURE EVENTS.

THE LOCAL FOOD CULTURE

The diversity of food produced in Manawatū includes a wide range of both animal and plant products produced on a range of farms from small areas to large farms, including covered culture that includes open plastic tunnels and glasshouses in a controlled environment (all artificial lights and humidity controlled). A strategy that champions Sustainable Nutrition aims to ensure locals have access to high-quality, locally produced fresh foods for both home consumption and showcased in restaurant dining and events in the region.

The wide range of existing farms and small plots are well placed to produce this food, but further within-farm diversification to other sustainable land uses, along with good coordination to manage the supply chain / web, will be essential to ensure the ongoing supply of nutritious food, to authenticate the sustainable production practices, and to ensure provenance is captured.

SECTOR EXPOSURE EVENTS

This part of the strategy will need support of the research capability including selection of species, development and proof of sustainable practices, refinement of covered culture growing techniques and development of logistics systems to match supply and demand. There is the opportunity to showcase local food at the E Tipu Boma Agri Summit in 2024

WORKSTREAM FIVE // **OUR MĀORI FOOD**

THE MĀORI FOOD STRATEGY.

THE MĀORI FOOD STRATEGY

A mana whenua and Māori business-led approach to the Manawatū Regional Food Strategy would emphasise the active involvement and leadership of local Māori iwi, hapū, marae, communities, whānau and businesses in shaping and implementing the strategy. This kaupapa is important as it prioritises the significance of Māori culture, land, and people first with Māori economic development in the region emerging as a result. The development of a Māori specific food strategy, which will be led by Māori for Māori, will promote sustainable growth and prosperity within the food sector for Māori and the region.

Incorporating this approach into the Manawatū Regional Food Strategy will contribute to the holistic development of the region's food system while respecting and promoting Māori culture, values, and economic aspirations. It will lead to a more inclusive, sustainable, and prosperous food sector that benefits all residents of the region with the kōrero being by Māori, for Māori.

VALUE WEB CAPABILITY IN THE MANAWATŪ

The region has significant capacity and capability in some parts of the value web but is lacking in others. This section is a quick assessment of the capacity and capability.

CUSTOMER AND CONSUMER

The region has limited direct contact or market insights of customer and consumer requirements. While this may be understood by producers supplying at the local level there is very little connectivity to national and international customers and consumers. The limited amount of processing in the region and the lack of major companies headquartered in the region also contribute to this lack of connection. This is particularly evident when looking to create value and the need for the research and development teams to clearly understand the future expectations of customers and consumers.

Effort needs to be made to engage with customers and consumers as outlined in the Draft Food and Beverage ITP[10] with government facilitating better access to market insights.

MARKETS AND MARKETING

The transactional sales approach undertaken by many New Zealand businesses, and the competitiveness between similar businesses for market share, does not provide a strong framework to understand and respond to either national or international markets. A longer-term approach to marketing will help ensure the production within the region is aligned to the markets.

This approach will also help to ensure that value is captured and created and encourage the utilisation of by-products. A good marketing approach will help to align supply and demand, particularly of the more commodity products, helping to remove price volatility and capture more value to the region.

LOGISTICS, STORAGE, FREIGHT

Te Utanganui – The Central New Zealand Distribution Hub, and the new State Highway Three Te Ahu a Turanga – Manawatū Tararua Highway, alongside the improved connectivity to the capital city of Wellington, and improvements to the port at Whanganui will mean there is an increased capability and capacity to economically manage and move product into and out of the region. Increased and improved cool storage capacity for fruit and vegetable crops will be needed and rapid links to export centres for some products will be required. In developing logistics and storage, the new developments need to utilise renewable, low emissions energy sources such as rooftop solar and efficient heat pump systems as well as green fuels such as Hiringa who have established a hydrogen refuelling station for heavy haulage adjacent to the airport. These improvements will stand the region in a good position to both capture and create value.

The Palmerston North Airport inside Te Utanganui has good links to Auckland and Christchurch enabling key people nationally and internationally to readily access the region, and is one of only three airports in New Zealand that has 24/7 capability for air freight.

10 https://www.foodticker.co.nz/wp-content/uploads/2022/12/54505-2022-Food-and-Beverage-draft-industry-transformation-plan.pdf

SKILLS AND LABOUR

Manawatū has some highly skilled people, particularly in the research and development and production areas. However, the collaboration between different organisations in the research area needs to grow.

Similarly, the nature of production being largely in single-land-use farms (e.g. dairy or meat), means the productive capacity of the region is not optimised. The lack of connectivity between the different parts of the value web, in particular science to production is constraining the development of research aligned to the region. The Rural Innovation Lab[11] is a regional example of working to improve this connection and is potentially well positioned to foster these relationships.

The skills and capability within the broader Massey University campus in Palmerston North, in both food production and processing could be more effectively utilised beyond research and development to provide education, information and training to farmers, processors and marketers within Manawatū, and more broadly across New Zealand, to further develop and refine a leading agrifood industry within the region.

UCOL has the capability to grow the much needed technician capability for research and production centres.

This upskilling should include the industry good organisations and build on their existing networks and practices. Catchment groups, which are not sector aligned, can be a major provider of information and support to the farming community. With groups such as the Manawatū River Leaders Accord[12] and the Manawatū River Catchments Collective there is a significant opportunity for provision of information to the land managers and also from the land managers back to the community. Ideally the approach will be to develop knowledge exchange networks where information moves both ways to benefit and upskill all parties.

This strategy provides significant opportunity for start-ups in the agrifood sector, and it is important to provide the ecosystem for these start-ups to establish themselves within Manawatū. The presence of a vibrant hub with collective business, innovation and pilot plant support means start-ups would be nurtured and remain in, or relocate to, the region rather than moving to other to centres, potentially leveraging off what is already in place.

Representative Working Groups will be established, led by CEDA, as part of the regional review of vocational education. This group should be able to help understand and support the development of the vocational work force for production, processing and logistics. The ability to provide year-round employment across the agrifood industry needs to be carefully considered as the strategy is implemented. Cheaper cost of living than some main centres should encourage people to live and work in the region.

11 ruralinnovationlab.nz

12 www.manawaturiver.co.nz/2021/11/25/manawatu-river-leaders-accord- receives-supreme-award-for-improved-river-health

PROCESSING AND PACKING

As outlined in the background section of this strategy, the processing capability operating in the region is limited. The impact of climate change, animal welfare, green energy and customer and consumer requirements for provenance, food safety and traceability are likely to require a significant rethink of food processing and packing. Further, to capture and create value a number of new products are expected to be produced. There may be opportunities to create a hub, aligned to the logistics hub, which has toll processing and packing capability for a range of food products and is well positioned to utilise all the raw materials. This capability may also encourage start-ups to remain in the area.

The production of any significant increase in a new crop, for example kiwifruit or fresh vegetables, will likely require new high-technology packing facilities.

These processing, packing and storage facilities should be enabled by the current and future renewable energy potential of the region, with good onshore wind energy resource, as well as options such as rooftop solar. Green heavy transport options such as hydrogen fuel (eg. Hiringa) will also be important.

Local government may have an important role in planning, securing suitable land, providing infrastructure and consenting.

PRODUCTION

Current production is generally sector-specific, with a farm targeted at particular commodities, such as dairy or red meat. The sustainable use of the land resource requires better matching of land use to the soils and microclimate of the region. Initially some work may be required to fully understand the potential productive capability of land, based on market opportunities/consumer-led products, and the risks associated with changes to land use and transfer this information to land managers/owners. It is expected it will require farms to collaborate more effectively with other similar farms in the region to achieve scale and continuity of supply, as well as to collaborate with processors and marketers to share insights. Land managers/owners will need to be supported and upskilled to enable them to integrate a range of sustainable land uses into their farms. The Rural Innovation Lab, catchment groups and industry sector organisations could all be key providers of information and support within well designed knowledge exchange networks.

RESEARCH AND DEVELOPMENT

The capability of the research community in Manawatū is significant. The lack of collaboration and a coordinated approach to a limited range of key research topics and the lack of connectivity to the other parties in the food value web means the true potential of this resource is not being captured for either the Manawatū or New Zealand. The lack of a cohesive functional agrifood R&D facility is constraining activity and complicates sharing of ideas and use of IP. The connectivity of research to the rest of the food value web needs to ensure flow of ideas and uptake of science occurs at all levels.

PROGRESSING THE STRATEGIC PRIORITIES IN THIS STRATEGY

The success of the Manawatū Regional Food Strategy relies on a focused Implementation Plan. This project-based approach, built into the five defined workstreams, must align with key central and local government initiatives to secure commitment and buy-in from commercial businesses. Achieving success depends on key doers and partners, with the strategy being executed through a coordinated, collaborative, and focused approach.

>> The implementation of this strategy requires a lead organisation to facilitate and coordinate the next steps. CEDA appears to be well positioned to undertake this role. However, there needs to be buy in from the broader sector to implement the strategy and reflect its intent in their own strategic approach.

>> There will need to be collaboration and resourcing from multiple funders to prioritise each opportunity set out in the strategic priorities for more detailed exploration/assessment and to drive action.

>> This will require a clear commitment from multiple organisations to identify and deliver on their key roles within clear timeframes. This commitment should be understood as new activity, over and beyond existing business/activity.

>> The collaborating parties will need to agree on the key steps and aligning these steps across and within the collaborating parties.

>> Sustainable Nutrition as a key focus of the Manawatū Regional Food Strategy is a collective responsibility. Manawatū has a unique opportunity to be not only leading for New Zealand but leading for the world. Delivery on this strategy will require investment from both local and central government and private business. Local and central government commitment is essential to ensure commercial business support.

APPENDIX

PEOPLE INTERVIEWED FOR THE PROJECT
// STAGE ONE

- Rob Baan (entrepreneur)
- Roger Van Hoesel (Consultant)
- Malcolm Bailey (Consultant)
- Sue Bidrose (AgResearch)
- Hew Dalrymple (Waitatapia farming)
- Shane Dooley (Callaghan Innovation)
- Ray Geor (Massey University)
- Tony Giles (Food Innovation Waikato)
- David Hughes (Plant and Food Research)
- Lain Jager (Primary Sector Council)
- Peter Landon-Lane (T&G Global)
- Gil Meron (Sprout Agritech)
- Mavis Mullins (numerous roles both in private sector and public; Māori leader)
- Damien O'Connor (Minister of Agriculture; Minister for Trade and Export
- Growth, Biosecurity, Land Information, and Rural Communities)
- Blair Okeeffe (FoodEast)
- Ian Proudfoot (KPMG)
- Jerry Shearman (CEDA)
- Jessica Smith (Te Tai Hauaru at Te Puni Kōkiri)
- Jan Thomas (Massey University)
- Dean Tilyard (Finistere)
- Abby Thompson (FoodHQ)
- Pahia Turia (Te Rūnanga o Ngā Wairiki – Ngāti Apa)

PEOPLE INTERVIEWED FOR THE PROJECT
// STAGE TWO

- Abby Thompson (FoodHQ)
- Mark Piper (FoodHQ)
- Brent Clothier (Plant & Food Research)
- Lee Huffman (Plant & Food Research)
- Li Day (Agresearch)
- Jason Wargent (Biolumic)
- Hew Dalrymple, (Waitapapia, Farmer)
- Matt Hocken (Farmer, Rural Innovation Lab)
- James Stewart (Farmer, Rural Innovation Lab)
- Paul Lewis (Proliant)
- Alison Watters, Farmer (Fonterra Director)
- Brent Morris (Manawatū -Whanganui Regional Skills leadership Group (MBIE)
- Amos Palfreyman (Miruku)
- Madz Batach (Local Food Action Network)
- Sandi Legg (Fonterra)
- Pierre Venter (Fonterra)
- Andy Smith (Fonterra)
- Kirsty Blair (Synlait)
- Benoit Guieysse (Massey Unversity, Tahi Spirulina)
- Nathan Williams (EG)
- Tony Egan (Greenlea Meats)
- Matt Keltie (26 Seasons)
- Jarred Mair (Te Puna Whakaaronui)
- Shelley Dew-Hopkins (Hopkins Group)

PEOPLE INTERVIEWED FOR THE PROJECT // STAGE TWO (CONTINUED)

- Ian Strahan (Farmer)
- Wayne Bettjeman – (MPI retired)
- Vonese Walker (Poutama Trust)
- Tainui Woodmass (Central Economic Development Agency)
- Ana Tupangaia (Central Economic Development Agency)
- Janet Ellery (Central Economic Development Agency)
- Neihana Pari (Te Manu Atatū)
- Jerald Twomey (Manawatū District Council)
- Todd Taiepa (Palmerston North City Council)
- Mere Whanarere (Te Puni Kōkiri)
- Kararaina Ratana-Peita (Te Puni Kōkiri)
- Lisa Warbrick (Te Pū Oranga Whenua)
- Ricky Pene (Te Au Pākihi)
- Grant Huwyler (Te Rūnanga o Ngā Wairiki Ngāti Apa)
- Aleise Puketapu (Tāhuri Whenua)
- Nick Pyke (Consultant)
- Justine Gilliland (Consultant)

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