

DIVERSIFYING FARM SYSTEMS IN MANAWATŪ // SUMMARY





EXECUTIVE SUMMARY

THIS REPORT BUILDS ON THE MANAWATŪ REGIONAL FOOD STRATEGY AND EXPLORES THE THEME OF LAND DIVERSIFICATION TO CREATE MORE RESILIENT FARM SYSTEMS, CONTRIBUTING TO A MORE RESILIENT FOOD PRODUCTION SYSTEM FOR MANAWATŪ.

Diversification aims to utilise parts of predominately sheep, beef and dairy farms that have soils and climates suited to select crops that will continue to be viable as the climate changes and market demands shift. Diversification may also result in development of postharvest facilities in the region where opportunities are identified, and in the development or expansion of value chains in the region.

The crops focused on here were selected based on an initial analysis of available data and were then scored using a range of criteria in a matrix.

The five chosen crops include one fruit and four vegetable crops. The four vegetable crops are garlic, green beans, fresh peas and sweetcorn, and are all durable vegetables meaning they will withstand storage and transport to market. The fifth and only fruit crop is kiwifruit. They are also crops which require adequate water supply which the region generally has available.

These five crops could all be successfully grown in suitable soils and climate zones in the region.



THE FIVE CROPS

FOUR VEGETABLE CROPS

GARLIC >> This makes up the largest import vegetable category in New Zealand with 75% imported, mostly from China. Domestic production is currently concentrated in Marlborough, facing high freight costs to the North Island. There's demand for New Zealand garlic due to its superior quality and flavor. Geopolitical tensions, like those between China and the USA, present export opportunities, especially to the USA and Asia-Pacific. Manawatū farmers could collaborate with Marlborough growers to supply the North Island and market during shoulder seasons. Garlic suits both short and long-term cropping systems.

GREEN BEANS >> The second largest fresh vegetable import to New Zealand is fresh green beans at 1700t per annum. New Zealand grows green beans primarily for processing resulting in exports of 17,500t per annum at a value of \$51m (NZD). Globally the growth in the fresh green bean market is forecast to have a CAGR of 2% by volume and 4% by value from 2023 -2030. Diversifying to green bean production could contribute to the local and national markets as well as or in addition to export markets using both fresh and processed. Green beans could fit into a farm system in either a short or long-term cropping system.

PEAS >> New Zealand grows approximately 58,500t of peas for processing across the country with around 300ha of land currently producing peas in Manawatū. Export value is around \$140m (NZD) per annum with New Zealand in the top 10 exporting countries. Only very small quantities of fresh green peas, sugar snap and snow peas are grown for the New Zealand market.

Manawatū is already growing peas for processing and the opportunity may be to transition into growing a range of pea types for fresh consumption to supply the local, domestic and potentially export markets. Peas could fit into a farm system in either a short or long-term cropping system.

SWEETCORN >> New Zealand produces around 77,000t per annum for processing and some for fresh consumption with small amounts currently grown in Manawatū. Exports of primarily processed corn from New Zealand are around \$26.5m (NZD). New Zealand imports a small quantity of sweetcorn in processed form from Australia and Thailand. The CAGR for sweetcorn is forecast to be 5.4% over the next few years. Major importing nations in the Asia Pacific are Japan, South Korea and the US. Manawatū may be able to supply fresh sweetcorn into the local, domestic and potentially export markets and the crop could fit well into a long term cropping system.

ONE FRUIT CROP

KIWIFRUIT >> Forecasts show a 5% compound annual growth rate (CAGR) for kiwifruit demand. Zespri's Climate Change Adaption Plan suggests expanding cultivation to new areas, with Manawatū being a suitable region. This area is ideal for green kiwifruit due to lower land values, which offer good returns. Bay of Plenty packhouses are seeking fruit to extend their season, and areas of around 60ha are manageable for a single manager, encouraging potential collaboration opportunities for Manawatū. Zespri and other packhouses provide established infrastructure and marketing support, and Manawatū offers scalable room to grow through its established distribution hub, **Te Utanganui**.



**View the five crop information documents at:
ManawatuNZ.co.nz/land-diversification**



DURABLE VEGETABLES IN A FARM SYSTEM

WE HAVE IDENTIFIED THREE POSSIBLE SYSTEMS THAT INCLUDE CROPS, THAT ALL USE AN ANIMAL COMPONENT PROVIDING GRAZING IN WINTER.

Animal grazing is an important part of the crop system as not only does it add to the economic outcomes, but it also improves the sustainability of systems by contributing to disease, weed and pest management and to nutrient cycling.



THE THREE SYSTEMS



The use of an annual crop as a single crop to aid in a pasture renewal programme.



The use of annual crops in a short term crop rotation as part of pasture renewal and cropping system and then returning to pasture.



A long term crop rotation using a range of annual crops.

GENERALLY, ALL THREE SYSTEMS CAN CONTRIBUTE TO CREATING A RESILIENT FARM SYSTEM.

>> FINANCIAL - the diversification of revenue streams reduces reliance on one or a few products. There is the potential to grow high value crops or to capture more value through processing or packaging post-harvest. There is also the potential to manage inputs, particularly nutrients, reducing some input costs.

>> ENVIRONMENTAL - the use of a range of crops can manage soil health and fertility, reduce the impact of weeds, pests and diseases, utilise nutrients effectively minimising leaching and, if as part of a pastoral farm system reduce methane emissions as total livestock numbers on the farm are reduced.

>> SOCIAL - the range of crops may create labour opportunities and upskill personnel as well as providing food for local communities and potentially some cultural value.

While adopting a different system won't provide immediate economic benefits, the aim of diversification is to future proof and ultimately ensure that a farm can stay viable longer term.

A POSSIBLE LONG TERM CROP ROTATION

<p>WINTER/ SPRING</p>	<p>Long term pasture - Grass</p>	<p>LONG TERM PASTURE GRASS >> Essential to any farm system with an animal component, pasture is required as it builds soil structure, develops good soil aggregates, provides grazing for stock. Grass is a good ground cover from which to establish many crops including sweetcorn.</p>
<p>SPRING TO LATE AUTUMN</p>	<p>Sweetcorn</p>	<p>SWEETCORN >> This crop would be harvested early autumn. Sweetcorn could be substituted with other crops, such as hemp, if there is market demand. Sweetcorn has a relatively high nitrogen demand and is deeper rooting so will have the ability to capture any residual nitrogen from the long term pasture before it is leached below the root zone. Sweetcorn could be established using minimal cultivation such as strip tillage.</p>
<p>LATE AUTUMN TO MID SUMMER</p>	<p>Garlic</p>	<p>GARLIC >> Following sweetcorn will create some challenges in creating a suitable seed bed, so mulching and rotary tilling may be required as soon as possible after harvest to incorporate the stubble unless a bioenergy use is developed for stubble. While this cultivation will damage soil structure it helps create a seed bed for garlic, which in turn provides control of broadleaf weeds. There is significant exposure of bare soil so some soil degradation will occur.</p>
<p>LATE SUMMER TO SPRING</p>	<p>Winter feed crop/annual grass</p>	<p>WINTER FEED CROP / ANNUAL GRASS >> This could be oats or brassica depending on feed required and the weed spectrum in the crop rotation. Both brassica and oats would be ready for grazing in approximately three to four months and both can be beneficial to the soil. The weed spectrum may help determine the crop type as broadleaf weeds could be controlled readily in oats while grass weeds may be controlled in brassica. These crops will utilise any excess nutrients from the garlic and sweetcorn crops.</p>
<p>SPRING/ SUMMER</p>	<p>Green beans or peas</p>	<p>GREEN BEANS OR PEAS >> Peas can be sown in early spring and could be directly drilled after winter grazing if minimal pugging. Green beans would need to be sown late spring to early summer so may follow an annual grass crop. Both crops are legumes, although fairly short term crops, so they may help with both soil quality and nutrients in soil.</p>
<p>EARLY AUTUMN TO SPRING</p>	<p>Re-pasture or winter feed crop</p>	<p>WINTER FEED CROP / ANNUAL GRASS >> This could be oats or brassica depending on feed required and the weed spectrum in the crop rotation. Both brassica and oats would be ready for grazing in approximately three to four months and both can be beneficial to the soil. The weed spectrum may help determine the crop type as broadleaf weeds could be controlled readily in oats while grass weeds may be controlled in brassica. These crops will utilise any excess nutrients from the garlic and sweetcorn crops.</p>

This report was commissioned as part of the implementation of the Manawatū Regional Food Strategy, which is a collaborative initiative involving Palmerston North City Council, Manawatū District Council, and the Central Economic Development Agency (CEDA), alongside a wide network of partners, stakeholders, and the business ecosystem.



ManawatuNZ.co.nz/land-diversification



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