



Succession 2050

*Gearing up for New Zealand's
food and agri future*

Disclaimer:

The information contained in this publication has been compiled from sources believed to be reliable. However, no representation or warranty, express or implied, is made as to its accuracy, completeness, currency or correctness.

This publication is provided for information purposes only and contains forward-looking statements, forecasts, projections and other statements regarding future events or circumstances. Such statements are based on current expectations, assumptions, estimates and information available as at the date of publication. Forward looking statements are inherently subject to risks, uncertainties and factors beyond the control of Rabobank New Zealand Limited, and actual outcomes, results, or developments may differ materially from those expressed or implied. These statements should not be relied upon as guarantees of future performance or outcomes.

This publication does not constitute professional, financial, investment, legal or strategic advice and has not been prepared to be used, and should not be used, as the basis for any decision or action. The information is general in nature only and does not take into account any individual's objectives, financial situation, or particular needs. Recipients should seek their own independent professional advice before acting upon any information contained in this publication.

Any opinions expressed in this publication are those of the individual author(s) and do not necessarily reflect the views of Rabobank New Zealand Limited.

All opinions, estimates and forward-looking statements are subject to change without notice. Rabobank New Zealand Limited undertakes no obligation to update, revise, or correct any information or forward looking statements as a result of new information, future events, or otherwise, except to the extent required by applicable law. Readers are cautioned not to place undue reliance on any forward-looking statements.

To the maximum extent permitted by law, Rabobank New Zealand Limited disclaims all liability for any loss or damage (including direct, indirect, consequential, or otherwise) arising from or in connection with the use of, or reliance on, this publication or its contents.

This publication may not be reproduced, distributed, or published, in whole or in part, for any purpose without the prior written consent of Rabobank New Zealand Limited. © 2026 Rabobank New Zealand Limited. All rights reserved.

Contents

- 05** CEO's foreword
- 06** Findings from our March 2026 survey of farming businesses
- 08** Transformation – six drivers for change in our sector
- 10** *Jarred Mair*: Embrace technology to seize the future
- 12** *Victoria Hatton*: What will be on the plate in 2050 – and are we preparing for it now?
- 14** *Scott Chapman*: Sustainable productivity in an economic world
- 16** *Justin van der Sluis*: Five global mega trends that will impact New Zealand out to 2050
- 18** *Zahra Champion*: Hidden in plain sight – unlocking New Zealand's biological riches
- 20** *Vangelis Vitalis*: The golden weather era is over
- 22** *Alyce Butler*: Sustainability – same old story or frontier of opportunity?
- 24** *Arama Kukutai*: Unlocking the potential in our whenua
- 26** *Wendy Paul*: Optimism is not enough – why the future of food and agriculture depends on what we do now
- 28** *Kate Scott*: Building capability for New Zealand horticulture's future
- 30** *Rosstan Mazey*: Substantiating sustainability proof points will strengthen New Zealand strong wool's comeback story
- 32** *Brad Olsen*: Boxing clever for customer and consumer relevance
- 34** *Hamish Gow*: Embrace our collaborative instincts to nurture successful new sectors by 2050
- 36** *Ray Smith*: Crossing the threshold – New Zealand food and agri set for new era of productivity
- 38** Our collective view of what 2050 could look like
- 42** Key changes our experts want to see between now and 2050



CEO's foreword

I'm pleased to introduce this year's white paper – the fifth in our series exploring the opportunities and challenges facing New Zealand's primary industry as we transition into the future.

In our 2025 white paper *Changing of the guard*, we discussed the sustainability of our industry in terms of on-farm succession from one generation to the next. The report highlighted that, over the next decade, New Zealand faces an intergenerational wealth transfer of farming assets of around \$150 billion. In the year to March 2026, it has been pleasing to record a 3% increase (to 36%) in the proportion of farming businesses with a formally agreed and documented succession plan.

This year, we expand on the topic of succession, looking out to 2050 from an industry standpoint. In addition to Rabobank's own insights, we've brought together a selection of leading New Zealand and international food and agri experts to share their perspectives on what the New Zealand food and agri sector could look like in 2050 and what needs to change to achieve that vision.

The 14 perspectives within the report cover a range of topics, including consumer trends, the global trade environment, environmental sustainability, growing our people and leadership capability, the role of science and biotechnology, and agritech.

The unifying thread across these outlooks and Rabobank's own view of the sector is a genuine sense of optimism and excitement, which can seem at odds with a world that is increasingly uncertain and volatile – especially when it comes to current geopolitical tensions and climate change challenges.

New Zealand food and agri is incredibly well positioned to succeed in the future if we can purposefully leverage our traditional strengths – harnessing nature, agricultural research and science – and early, considered adoption of new technology.

Predicting the future is always fraught, but we take heart from our survey of 450 farming businesses – 29% of farmers think the overall outlook to 2050 is somewhat or a lot better than the present day compared to 22% who think things will get somewhat or a lot worse. Confidence in future leadership of the food and agriculture sector is even more positive – 58% of farmers think the quality of leadership will be somewhat or a lot better than today compared to just 13% who see leadership getting somewhat or a lot worse.

In sharing our reflections and ideas, Rabobank and the individual contributors hope to generate deeper discussions about the challenges and opportunities in front of New Zealand food and agri and how the system – including the regulatory environment – might need to adapt to better unleash our national potential.

As Horticulture NZ's Kate Scott puts it, "If we are not deliberate about where we are heading, the future will arrive by default rather than by design."

Counting this year, New Zealand will have nine general elections by the end of 2050. This presents nine separate opportunities for us to move away from the national 'policy straitjacket' of short-term political cycles and the considerable uncertainty this imposes on our farmers, growers and food producers.

As New Zealand's only specialist food and agribusiness bank, Rabobank will continue to play a role in financing and supporting farmers and growers as they evolve and adapt to the opportunities and challenges outlined in this white paper. Specifically, that will require us to remain close to our clients so we can anticipate those changes before they arise and contribute to solutions that add value to their businesses and assist in their planning out to 2050 and beyond.

Some examples include our investment in the AgriZero^{NZ} public-private partnership, thought leadership through white papers such as this, insights on key issues and opportunities from our global network of RaboResearch analysts, ongoing dialogue with policy makers and looking for opportunities to develop new and tailored products and services.

We welcome your feedback on the insights and thinking contained in this report – which will, in turn, help us ensure our banking solutions are tailored to the changing needs of New Zealand's food and agri sector into the future.

I hope, like me, you find value in the insights shared in this year's white paper, strengthening your optimism and determination for the years and decades ahead.



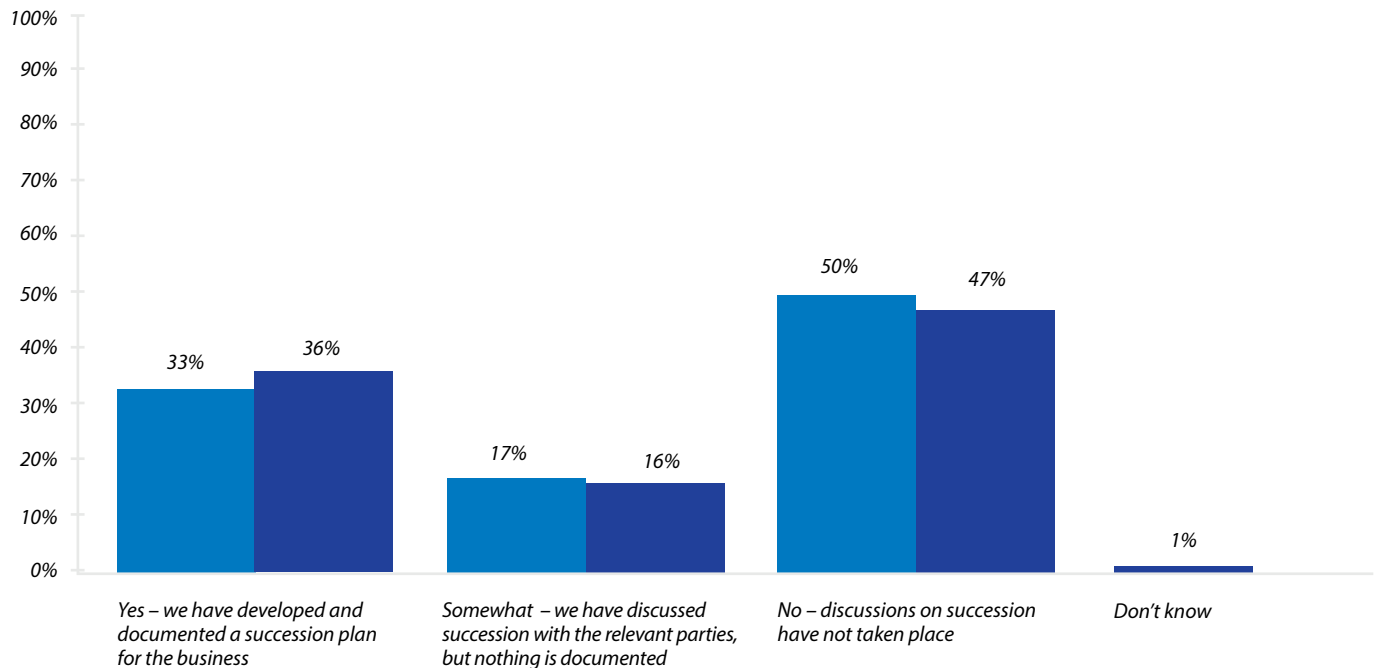
Todd Charteris

Rabobank New Zealand
Chief Executive Officer

Findings from our March 2026 survey of farming businesses

Succession planning

Do you have an agreed succession plan in place for your farming business?



March 2025

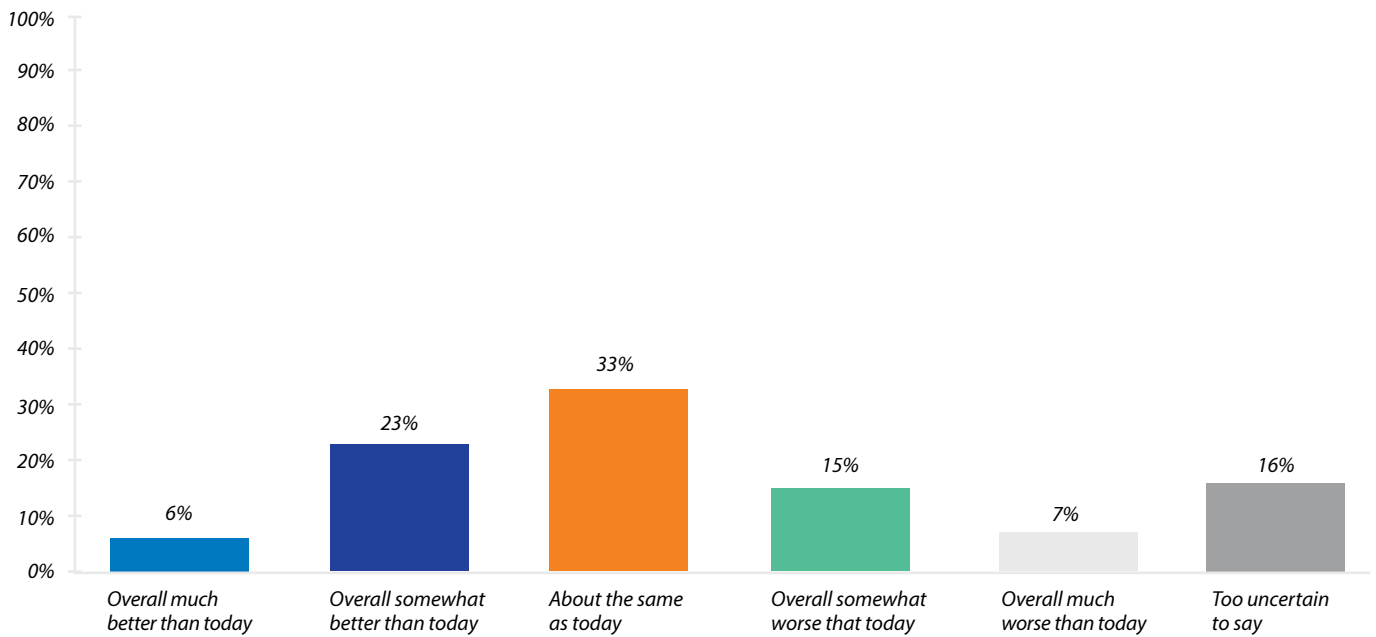


March 2026

It is pleasing to see a 3% improvement in those with a developed and documented plan and corresponding 3% decrease in those who have not started at all.

Outlook for 2050

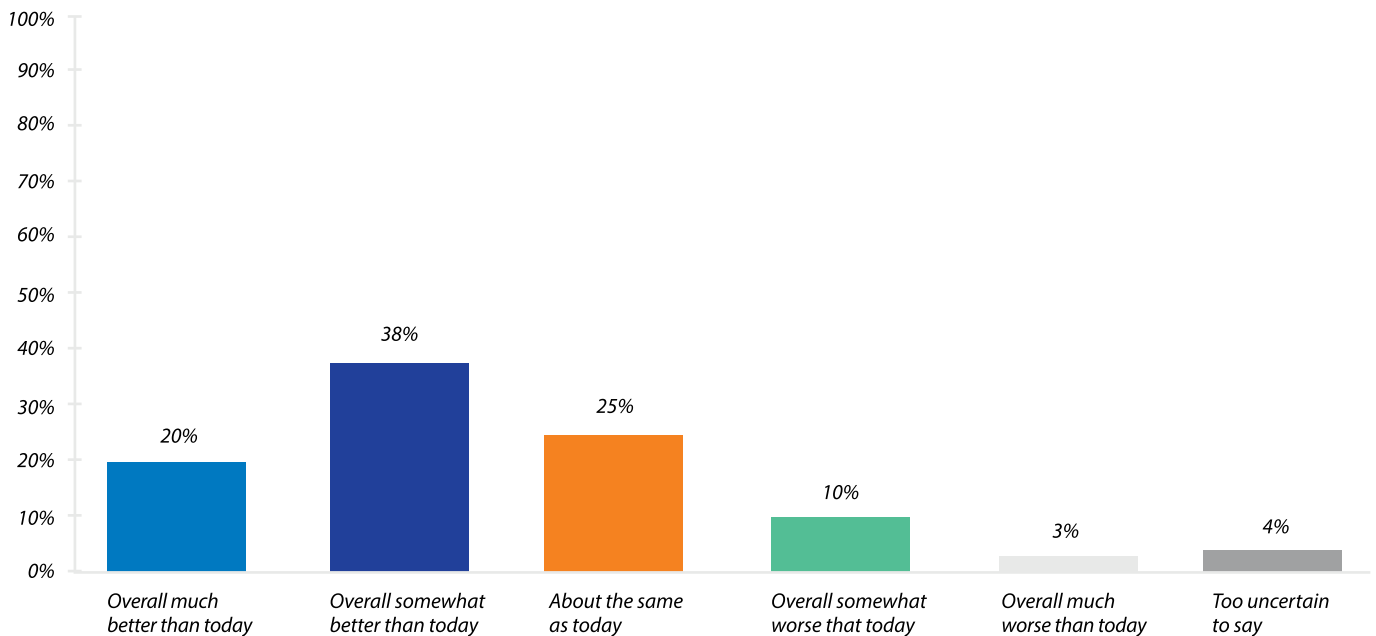
Which answer best describes the opportunities and challenges you expect your farming operation and business will face in 2050?



The sample of 450 farmers found that 29% see future as much or somewhat better than today compared to 22% who see it as somewhat or much worse than today. Farmers and growers in the upper South Island were the most optimistic with 38% expecting opportunities and challenges as a lot or somewhat better than today. By contrast the lower North Island had a high proportion (29%) of farmers and growers who saw things getting somewhat or a lot worse by 2050.

Confidence in leadership

How confident are you that New Zealand will have the quality of food and agriculture sector leadership it needs in 2050?



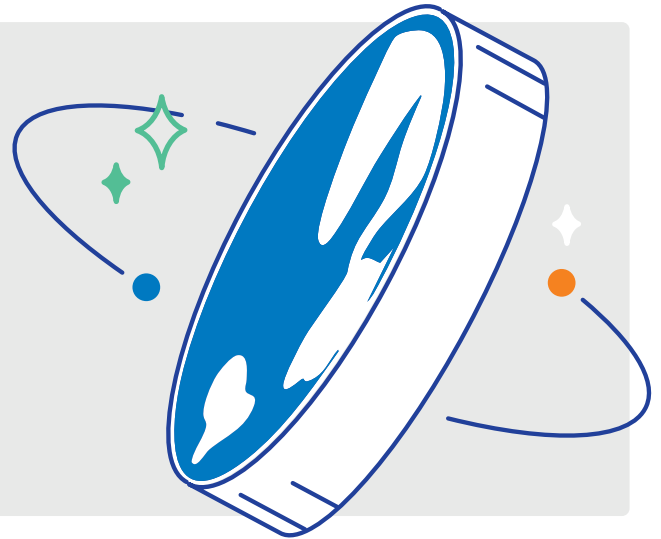
The 450 farmers and growers surveyed showed a high degree of confidence in the quality of leadership in the food and agri sector they anticipate by 2050. 58% expect the quality of leadership to be overall much better than today compared to just 13% who see the quality of leadership as overall somewhat or much worse than today. There was a marked difference between the lower South Island, with 65% confident that leadership would be somewhat or a lot better than today, and the lower North Island, which could only muster 48% on the same survey question.

Transformation – six drivers for change in our sector

New Zealand is a major food producer in a food-hungry world that is on track to need 56% more food by 2050.¹ In the year to June 2026, our food and fibre exports are forecast to hit \$62 billion, and the government has signalled its plans to help double New Zealand exports by 2034. Here's our pick of the six megatrends that NZ Inc. and producers will navigate on the road to 2050.

Table for 10 billion

- Earth has 8 billion people now and this will grow to 9.7 billion by 2050.
- Expect major demand increases from Asia and Africa and more spending per capita from these countries.
- Emerging market consumption could be two-thirds of global consumption in 2050 versus one-third today.



Bottomless bowl

- In 2026, 70% of people in the world are experiencing wealth inequality. 840 million people will be food insecure in 2050.
- Currently, 10% of people worldwide fall ill from contaminated food each year. Consumers worry about fraud and contamination.
- Food sovereignty – the efforts of communities to control and access their own food sources – is on the rise.

Tough trade

- Geopolitical tensions and protectionist policies are reshaping supply chains.
- Longstanding multilateral trade agreements are under threat and trade barriers are rising.
- Governments are building domestic resilience – growing capacity, stockpiling, banning exports or increasing technical rules for access.



Identity eating



- Ageing populations are becoming more health conscious in their diets, seeking functional foods and eating to prevent known health risks.
- GLP-1 (weight loss) medications are reducing portions and driving people to higher-protein diets.
- Today's youth will accelerate demand for sustainable and ethical food to address physical and mental health.
- Growth in demand for alternative foods such as plant-based and other alternative proteins but not enough to seriously threaten animal proteins.
- Convenience is king – people are choosing convenience foods that save time and effort and this will spread from the West to Asia.



Exponential everything

- Every step of food production and agriculture – from paddock to plate – will transform through science and technology.
- AI, internet of things, big data, virtual reality, robotisation, digitisation, blockchain and smart/remote farming.
- Biotechnology will accelerate cellular agriculture, genomics, GM, microbiome research, synthetic biology and alternative proteins.

Planetary limits

- Increased frequency of droughts, floods and heatwaves due to climate accelerates the rush to resilience.
- International markets increasingly want evidence of low-carbon, nature-positive, cruelty-free production.
- Renewable energy integration and circular economy principles are redefining land use, including new value streams from farm waste.



¹ Page 22, *The Future of Aotearoa New Zealand's Food Sector: Exploring Global Food Demand Opportunities in the Year 2050*. Ministry for Primary Industries, April 2023. This excellent MPI report informed a number of the sub-points in this section.

Embrace technology to seize the future



Jarred Mair is Chief Insights Officer at MPI and has over 20 years' experience working with the food and fibre sector, holding senior roles in the public and private sectors. He leads MPI's Insights team, taking a systems view to track and analyse impacts from geopolitics, trade, market shifts, new technologies, value chain enhancements, emerging business models, farming systems and inputs and mapping the implications back onto New Zealand's economy. The team also undertakes detailed studies into topics relevant to the sector such as strategic framing of the sector, alternative proteins and genetic technologies.

The next 10–15 years will see the largest transformation of the global economy in the last 150 years. All bound together by AI, we're entering the fourth industrial revolution – a labour revolution, financial revolution, agricultural revolution, biotech revolution and societal revolution all at the same time.

AI, AI, it's off to work we go

AI is a technology accelerant for creating new capabilities as well as deepening our capabilities within certain technologies to impact our food and agriculture value chain in every way. There are already companies delivering services in this.

For example, most farmers go through 45 years in a standard working life. AI platforms and AI agents can aggregate the knowledge of all farmers across all seasons, support decisions, take actions and drive profitability over time. We'll have unlimited knowledge about what decisions to make in different situations across all production systems.

Farmers will become system managers – for activities on farm, information flows, things that are waste or low value – and generate new revenue streams. They'll conduct the orchestra rather than having to play every instrument themselves.

Within 10 years, expect humanoid robots to be in in our milking sheds and in horticultural use, picking, pruning and thinning. Large-scale commercial production of these humanoid robots is set to ramp up from 2028 to millions of units per annum by the end of this decade, starting in the car industry. That is a massive phase shift in terms of how we think about what happens on farms.

Synthetic biology, biologics and alternative fertilisers will deepen, broaden and accelerate, often at exponential rates, due to AI.

In the gentic space, CRISPR gene editing techniques will design the proteins for targeting and cutting DNA, which means it's faster, quicker and more stable in terms of multiple ongoing iterations.

We're now seeing bacteria that can enter a plant and sequester up to 50% of its nitrogen needs from the air. There are already 2 million acres planted in the US across corn, rice and potatoes. In biosecurity, the use of synthetic peptides in insecticides can target a single pest. Varroa mites are a case in point.

Connecting growers and consumers

Tokenisation of the value chain is coming – the process of representing physical, real-world agricultural commodities into digital tokens on a blockchain. Each token represents ownership, rights or value, enabling transparent, secure and efficient tracking and trading from producers to consumers. Steps in a transaction are verified in a fraction of second, effectively shortening value chains and increasing velocity of payments. This revolution has already started in third-world economies with cocoa, coffee, grains and tropical fruits, and it's progressively building out for the global food system.

It means a customer or consumer in New York can basically reach back down the value chain and connect with the producer of a good. These new value pathways are redefining the role of retail in the food system through digital platforms and autonomous food delivery.

These tokens will unlock a deeper connection to the consumer whether it's through a provenance or assurance story, an accreditation system or to carry the regulatory certificates.

Silver tsunami

Ageing populations and AI are creating new opportunities for New Zealand producers to shift from a mass market approach – marketing the same product to lots of people – to a more personalised approach emphasising high nutritional foods to discerning wealthy consumers.

People over the age of 50 currently represent 34% of global GDP (around US\$45 trillion) but account for 49% of food and beverage spending and 60% of health spending. By 2050, that same cohort will shift to 39% of global GDP, worth about US\$118 trillion. That's phenomenal growth.

Older people are seeking highly functional foods that are more easily digested. That's a function of age. Around 10% of Americans go to their doctor at least once a year because the food they eat is too complex for them to digest. The new GLP-1 (weight loss) drugs are adding to the shift towards higher nutritional meals and smaller meal sizes.

These trends favour New Zealand because we produce natural foods that are generally easier to digest than complex or processed foods. We don't currently foresee alternative proteins moving beyond 10–25% of some markets. Those food types are very capital intensive and expensive and require high energy input to operate.

Water tech on the way

New water technology is about to come into the market to increase water certainty at both a localised farm and regional scale. We can increase the productivity of land that is otherwise too dry. This technology pulls water straight out of the air to condense it without high energy use.

A mobile off-grid container-based system with solar panels can produce 1,000 litres a day. Larger ocean-based units powered by wave energy can produce 50,000 litres per day. If scaling of these technologies continues as expected, it means water certainty for horticulture and dairy farmers, while Kiwi sheep and beef farmers who often need to sell early in a drought season may be able to hold off for better prices.

Feeling the energy

In the UK, 2 million homes now get their gas produced from animal waste through biodigesters. This could grow to 10 million homes. As New Zealand looks to transition its energy supply, we have the ability to take waste streams off farm and use them as inputs into the energy system and to place wind energy systems on farms to graze underneath them.

There for the taking

The New Zealand food system, as a whole, is in the sweet spot. There will be volatility, but there's a massive opportunity sitting there.

In the past, our discussions have been focused on our problems. The conversation will quickly switch to the solutions and technology we want and how we make that work as a country. It's about moving from problem definition to solution.

We need to be proactive and early adopters to get these technologies and capture the benefits of their capabilities. They won't come here unless we go get them. Why would they come here to a small market when they can sell thousands of them overseas, much closer to home? We are going to have to be far more proactive around these technologies than we have been.

We know we're in a very good position with where the world's going. The next 15 years is a sort of a Goldilocks zone – not too hot, not too cold, growing population, massive demand increases, lots of food required. The future is ours to grab and to shape – for all of New Zealand's benefit.



“ We need to be proactive and early adopters to get these technologies and capture the benefits of their capabilities. They won't come here unless we go get them. ”

What will be on the plate in 2050 – and are we preparing for it now?



Victoria Hatton is Chief Executive Officer of FoodHQ, New Zealand's national food innovation hub, which connects researchers, industry and entrepreneurs to accelerate the development of high-value, sustainable food products for global markets. She brings extensive experience across climate change, sustainability and food production, having worked closely with government and international organisations, including the Food and Agriculture Organization of the United Nations, and led research teams at Massey University. With expertise spanning science, policy, innovation and advocacy, Victoria plays a central role in positioning FoodHQ as a catalyst for collaboration across New Zealand's food system.

When we talk about the future of New Zealand's food and agriculture sector, the conversation often begins with production – how much meat, milk or crops we can grow and how efficiently we can do it.

I believe we need to lift our gaze. The more important question is what future consumers will want on their plate and whether we are willing to work backwards from that future rather than forwards from what we already produce.

By 2050, the world will be older, hotter and more crowded. According to the World Health Organization, around 2.1 billion people will be over 65. Younger generations will have grown up with climate change, wellness and sustainability embedded in everyday decision making. Food will be judged not only on taste or price but on nutrition, transparency and environmental impact.

For New Zealand, with finite land and a changing climate, that creates both constraint and opportunity. Our future does not lie in volume of production. It lies in increasing its value.



Premiumisation is the way forward

Not premium as a glossy badge but premium defined by provenance, nutrient density, environmental performance and trust. Consumers will increasingly expect food to support longer, healthier lives, and many younger people already see functional nutrition as a baseline rather than an indulgence.

That means New Zealand's future is not simply exporting more meat and milk. It is about doing better with what we have rather than assuming we can always do more.

Rethinking what farming looks like

In 2050, we will still see livestock grazing our hills but also expect to see stainless steel vats sitting beside paddocks, producing protein through precision fermentation while animals continue to graze. Farmers will be earning income from both systems, using less land to produce more nutrition.

This is not about replacing pastoral farming. It is about complementing it.

Precision fermentation, alternative dairy and cell-based agriculture are often framed as threats to our traditional industries. I see them as tools that allow us to create protein and functional ingredients at scale, explore new markets and reduce pressure on land while maintaining our pastoral identity.

Embracing this future requires some honest reflection.

Farmers have deep emotional connections to what they produce. Many have spent decades building herds and refining genetics. Their animals are their life's work. Asking farmers to imagine that leg of lamb becoming a red meat protein powder, shipped offshore and earning six times the return, is not a simple commercial calculation. A leg of lamb on a plate feels tangible and proud. A scoop of protein powder dissolved in water feels abstract, even if it delivers more value.

Processors face similar dilemmas. We have invested heavily in infrastructure designed to cut steaks and racks. Moving towards drying facilities and ingredient production would mean writing off assets and taking significant risks. Somewhere along the way, New Zealand lost its appetite for experimentation. We once saw ourselves as a small, agile nation willing to trial new ideas. Today, we hesitate over gene technology and precision fermentation, often focusing on the cost of change rather than the cost of standing still.

“Asking farmers to imagine that leg of lamb becoming a red meat protein powder, shipped offshore and earning six times the return, is not a simple commercial calculation. A leg of lamb on a plate feels tangible and proud. A scoop of protein powder dissolved in water feels abstract, even if it delivers more value.”

“ Food will be judged not only on taste or price but on nutrition, transparency and environmental impact. ”

The future consumer is not waiting

Future consumers will be more informed, more demanding and more values-driven than any generation before them.

Future consumers will expect smaller portions with higher nutritional impact, foods rich in protein and functional benefits and proof of low emissions and positive environmental outcomes.

We can already see where this is heading. China is developing rice varieties capable of delivering up to 75% of daily protein requirements in a single serving. That tells us the global plate of the future will be denser, not larger. Yet we are not asking similar questions of our own crops. Why could we not breed chickpeas or lentils with dramatically higher protein content? There is nothing scientifically impossible about that. What is missing is strategic intent.

When I first started talking publicly about net-zero food 6 years ago, I found myself on the front page of *Farmers Weekly* and quickly learned how confronting the idea felt for many. Today, global companies such as Nestlé are actively pursuing net-zero supply chains. Measuring emissions across food systems will become standard practice. The longer we delay engaging with this reality, the further behind we fall.

We had the same opportunity with grass-fed. We have always been grass-fed, yet only recently did we choose to market it deliberately. We could have led that narrative. Instead, we followed.

Net-zero food presents the same choice. We can debate it – or we can design for it.

Science, skills and the value chain

None of this happens without sustained investment in science, innovation and people – from researchers and food technologists through to farmers and processors. It is not enough to fund what industry is already doing. We need to deliberately back future-facing technologies and capabilities.

Succession is not only about who owns the land. It is about capability across the entire value chain. Without food technologists, farmers cannot add value. Without researchers, innovation stalls.

We are seeing encouraging interest from young people in rural careers yet declining enrolments in some food technology programmes. Recently, we hosted 60 year 12 students at Massey for a Food Innovation Youth Summit. Many arrived thinking it was little more than a free camp. By the end of 3 days immersed in food science and innovation, around two-thirds were seriously considering careers in food technology. Young people cannot choose pathways they do not know exist.

The students who will be shaping food systems in 2050 are only just starting school. That means we need to build awareness and capability now, not in a decade's time.

Turning readiness into reality

Change feels risky when information is fragmented and support is unclear, which is why honest conversations about diversification, complementary production systems and transition pathways matter.

The opportunity is real. The science exists. The global signals are clear that future consumers will reward food that delivers nutrition, transparency and climate integrity. If New Zealand is ready, we can be at the forefront of that shift. If we are not, others will take that position.

The future of New Zealand food will not be decided by how efficiently we repeat yesterday's model. It will be shaped by whether we are brave enough to imagine what belongs on tomorrow's plate and disciplined enough to build towards it now.



Sustainable productivity in an economic world



Scott Chapman is Professor in Crop Physiology at the School of Agriculture and Food Sustainability at the University of Queensland and an Affiliate Professor with Queensland Alliance for Agriculture and Food Innovation. His research focuses on crop physiology, digital agriculture and the application of machine learning and artificial intelligence in agriculture. He spent more than two decades with CSIRO, leading and contributing to major national and international research programmes spanning climate-resilient cereals, precision agriculture and crop improvement across wheat, sorghum, sunflower and sugarcane. He is internationally recognised as a highly cited researcher in plant and animal sciences and agricultural sciences.

If we're talking about agriculture in 2050, the starting point isn't technology or policy. It's economics.

Farming has always been shaped by margins. When a machine costs more than a million dollars, small operational details suddenly matter a great deal. The length of a paddock run, how often a tractor has to turn, how much fuel it burns over a season – these are not minor considerations. Over hundreds of hectares and multiple passes a year, those differences accumulate. That steady focus on efficiency has gradually reshaped farm layouts, particularly in places like Western Australia, where scale has become central to staying competitive.

The same financial logic explains why land use shifts when conditions change. After a string of good seasons, many pasture producers in Western Australia have moved into cropping. More than a million extra hectares of wheat went in last year, along with a significant lift in canola, simply because the returns made sense. After seven or eight favourable seasons in a row, cropping can begin to feel like a low-risk decision. It rarely stays that way forever, but in the moment, the numbers drive behaviour.

Income diversification follows the same pattern. A wind turbine on a property may not appeal to everyone aesthetically, but the annual payment provides stability. In a business where income can swing widely with weather and markets, that matters.

Water allocation tells a similar story. Permanent plantings such as almonds represent years of sunk capital. Losing trees is not the same as losing an annual crop. That reality shapes policy and priority. These pressures aren't abstract. They reflect how agricultural investment works in practice.

Land values bring another layer of complexity. In many regions, purchase prices imply returns that are tight by historical standards. For younger farmers buying in at those levels, the margin for error narrows. Recent La Niña seasons have supported strong yields and reinforced confidence. But climate systems move in cycles. When they shift, businesses carrying high debt and high land values will feel it quickly.

In the end, economics defines the space in which every other decision is made.

“New Zealand cannot compete globally on volume alone. We compete on quality.”

Technology works when it fits

Agriculture has seen a rush of investment in new technologies, much of it aimed directly at farmers. The assumption is often that growers are a large consumer market. In reality, particularly in countries like Australia and New Zealand, the number of farmers is relatively small and they are already managing complex operations. They are cautious about tools that sit outside their existing systems or demand extra time.

Technology tends to gain traction when it fits into what is already there. Fertiliser suppliers can incorporate data analytics into their recommendations. Seed companies can combine yield records, satellite imagery and crop models to refine planting advice. When those insights arrive as part of normal business interactions, uptake is far more likely.

Plant breeding provides a clear example. Genomic marker technologies were once seen as an added expense. Over time, they became embedded in breeding programme and are now routine. Hybrid seeds in horticulture carry years of accumulated research. A tomato seed worth a dollar reflects the reliability and performance built into it through long-term scientific work. That value has been absorbed into commercial systems rather than sitting alongside them as an optional extra.

Remote sensing is moving in the same direction. Drones are already used to measure canopy temperature and detect nutrient stress at fine resolution. Hyperspectral satellites are expanding those capabilities across whole regions, capturing detailed light signatures that indicate plant health and biomass. Subtle differences in canopy colour or temperature can signal nutrient deficiencies before yield losses become visible. As land becomes more expensive, managing variability within paddocks at a finer scale becomes worthwhile. Measurement tools are gradually shifting from research into everyday management.

Market access is another area where integration matters. Australia and New Zealand cannot compete globally on volume alone. We compete on quality. Traceability systems such as fibre identification in cotton allow producers to verify origin and production standards through processing. These systems cost money, but they support access to premium markets where transparency influences purchasing decisions.

Managing land for the long term

Looking after land over decades comes back to basics: soil and water.

It's easy to focus on what a crop returns in a single season. What's less obvious is what it quietly takes away. Every harvest removes nutrients. The major ones like nitrogen, phosphorus and potassium are routinely replaced. The smaller elements don't get the same attention. Zinc, manganese and others can decline slowly over time, and the signs aren't dramatic at first. A slight change in colour. A patch that grows a little shorter. It can take careful measurement to notice the pattern before it shows up in yield.

That's where newer tools are starting to matter. Precision application systems allow inputs to be adjusted across a paddock rather than applied uniformly. Satellite imagery and drones add another layer, helping growers see variation they might otherwise miss. When land values are high, ignoring those differences becomes costly. Paying attention to small variations is not about perfection. It's about protecting a long-term asset.

Climate makes this more pressing. A run of good seasons can give a sense of stability. In Western Australia, strong rainfall patterns have encouraged expansion into cropping. That's understandable. But seasons change. When rainfall tightens again, soil condition and past management decisions will determine how well a system holds up.

Horticulture is dealing with similar realities. In Queensland, growers are putting up shade structures and adjustable roofing to cope with heat stress. In South Australia, large glasshouses recycle most of their water because they have to. These systems aren't cheap, but they reflect the direction things are heading as temperatures rise and water becomes less predictable.

Elsewhere, the same principle plays out at a different scale. A farmer in India or Africa working a few hectares faces decisions that can affect a family's income for the year. Whether to apply fertiliser. Whether to transport produce to market. Access to reliable price forecasts or satellite-based advice can shift those decisions in meaningful ways. Across millions of small farms, those marginal gains add up.

People make the system work

All of this depends on people. Across our region, there are significantly more agricultural jobs than graduates – often 10 roles for every one person coming through. At the same time, much of the advanced training in analytics and artificial intelligence is undertaken by overseas students who may not stay. Many growers are also nearing retirement, so that combination creates pressure on capability.

Artificial intelligence can help analyse patterns across climate, soils and crop performance. It can support better decisions, especially where large datasets are involved. But it doesn't replace experience. The quality of the outcome depends on the people asking the questions and interpreting the results.

By 2050, agriculture in Australia and New Zealand will likely be more data-informed, more diversified in income and more accountable to global markets demanding transparency. Climate variability will still shape production, and land prices will continue to influence strategy.

The constant, though, will be the need to balance economics with stewardship. Soil and water still sit at the centre. Technology will only matter if it strengthens those foundations and fits within how farms actually operate. And the system will only function as well as the people working within it.

“By 2050, agriculture in Australia and New Zealand will likely be more data-informed, more diversified in income and more accountable to global markets demanding transparency. Climate variability will still shape production, and land prices will continue to influence strategy.”



Five global mega trends that will impact New Zealand out to 2050



Justin van der Sluis is Global Head of RaboResearch Food & Agribusiness. With more than 20 years' research and business development experience in banking, he previously headed Rabobank's research team for Europe and Africa and was a Commercial Director with Banco Regional in South America. He holds a PhD in economics and business from the University of Amsterdam.

We see five big trends playing out in the global north that are highly relevant because they shape the global strategic context for major agricultural exporters like New Zealand.

First, the northern hemisphere has slowing growth in food demand because population growth and economic growth are slowing. Food markets are maturing – weight loss drugs, ageing populations and health trends result in lower portion sizes prevailing in several key markets.

The second trend is that more and more countries in the global north are reaching the limits of production growth. Yes, technology is still improving, but the drive to just put more inputs in – more fertiliser, better genetics, more crop protection – is not happening. In many cases, production will need to be reduced because of negative impacts on the environment.

The third trend is huge – the volatility that comes from a crumbling multilateral world order and trade agreements. The world order as we have known it since the Second World War is being taken down. Countries are increasingly focusing on themselves, on resilience, on making sure they have a supply chain to withstand shocks amid uncertain security.

“Countries are increasingly focusing on themselves, on resilience, on making sure they have a supply chain to withstand shocks amid uncertain security.”

This volatility is impacting growth – the more costs you bring into the system caused by trade wars and trade barriers, the more it gets passed on to the system. There's less opportunity to grow. Global trade is likely to face a more bipolar world with a China block and a US block forcing their partners into their own block where they feel it is necessary.

A resulting fourth trend is that supply chains will also be hit by volatility. After decades of huge productivity increases in agriculture leading to consistent oversupply to the market (and lower food prices), we now see a better balance between global supply and demand. But this means there is less ability to absorb shocks – for example, from extreme weather due to climate change.

The fifth and final trend is the constant reallocation and rebalancing of responsibilities between the public and private sector. Governments are prioritising strategic autonomy. They are reducing their own sustainability ambitions and asking more from the private sector. This whole play will continue in the coming decades where governments are saying, “OK, we are putting in place regulation, but preferably that is only you reporting on your progress and making sure you reach your targets as a sector. You need to come up with your own solutions and make sure you reach those targets.” New Zealand will need increased local co-operation to stay within the sustainability boundaries.

What it means for New Zealand

I think New Zealand will stay well positioned because it's not too big, it's geographically far away from the geopolitical turmoil and it's been a reliable trading partner over many decades. New Zealand's free trade agreements show it's doing a good job staying connected to the rest of the world, although geopolitical tensions increase the risk of being forced to choose in a more bipolar world.

The long-term, significant slowing in demand from the global north will impact New Zealand – maybe even a bit more than other countries – since it exports so much of its dairy, meat and fruit. However, as food production growth slows in the north, New Zealand is well poised to fill the gap, depending on how production continues to operate within planetary boundaries and on the extent to which untapped capacity is used.

Two things help the New Zealand agricultural system stand out positively in the rest of the world. The system is largely based on locally grown feed so there is a base of resilience built in that doesn't hit as hard when there is global price volatility in animal feeds. Of course, the exposure is still there on chemicals for crop protection and fertiliser.

Second, the pasture base of the New Zealand system is closer to what I would call a more regenerative agricultural system. By itself, this would be more resilient to shocks. The national question is how the agricultural community collectively shapes an approach that is not only sustainable at an individual farm level but also considers the wider ecosystem, including long-term factors such as regional water availability, which influences future productivity.

Agriculture will always emit nitrogen and methane. It's more about how we can build the ecological system around it to stay within planetary boundaries. It will need more than technology and genetics. The way externalities such as carbon, methane and nitrogen are valued in the future, whether through markets or other mechanisms, will play a role in how quickly New Zealand's production systems can evolve.

Making friends with alternative proteins

The largest uptake of alternative proteins is now on the dairy alternatives side. Of course, it's a lot smaller on the meat alternatives side and there are no viable cultured meat cases globally yet. North America and Western Europe lead the uptake of alternative proteins, but for the next 10 years, we won't even reach 10% of the market for dairy and even less for meat alternatives.

Beef prices are sky high in Europe at the moment. This is because of shrinking herds in the major beef-producing countries like France and Germany caused by regulatory pressures, environmental policies and the high costs structure.

The major shift that's coming is more 'hybrid' protein where, to make it more affordable, your beef patty will be maybe 20–30% plant-based and the rest is beef. It's a product that aspires to deliver the same structure and mouth feel that you get from consuming beef but with a lower footprint because of the hybrid ingredients.

Riding the GLP-1 train

Obesity rates are increasing rapidly across the whole global north, except for countries like Japan and South Korea. The new GLP-1 (weight loss) medications have the potential to change eating habits and the way people consume – in a positive way for red meat, dairy and fruit exports from New Zealand.

To counter the muscle loss occurring when using weight loss drugs, we expect a larger uptake of high-quality protein and fresh produce in the new diet mix as well as an increased emotional focus on the origin of the product. With this combination, New Zealand is in a good position with a nature-based production system to target those premium high-value markets. This can go beyond focusing on consumer products.

“The new GLP-1 (weight loss) medications have the potential to change eating habits and the way people consume – in a positive way for red meat, dairy and fruit exports from New Zealand.”

It can also build on the ingredients side since we see food manufacturers also changing the make-up of their products to adapt to the consumer impacts of these GLP-1 type of drugs.

Into Africa, India and Indonesia

While population has peaked in China, the growth of the middle class is far from finished there. Other regions of continuing vast potential, current conflicts aside, are the Middle East, Southeast Asia and Africa. There will still be volume growth in these regions for the next 25 years. Africa is still urbanising and therefore working populations are becoming more wealthy and seeking good-quality produce. Not many countries have cracked that puzzle well – New Zealand has the negotiation and trading skills to embrace this opportunity.



Hidden in plain sight – unlocking New Zealand’s biological riches



Zahra Champion is Executive Director of BioTechNZ and Assistant Director of the Institute for Innovation in Biotechnology. She has had significant involvement with initiatives to grow productivity and international competitiveness in New Zealand and has held senior management and governance roles, providing advice and leading projects in food and beverage, biotechnology, agriculture, health and information technology both in New Zealand and overseas. Zahra holds a PhD in medical and health sciences.

Behind New Zealand’s rolling paddocks, lush pastures, plump animals and fruit-laden plants lies a biological system of almost unlimited economic and environmental potential. We call it agriculture, but if we zoom it down to the granular level, it’s doing more clever things with the cells and molecules that make up every living plant and animal in our agricultural system.

In New Zealand, we’ve got form. Glaxo was founded in 1904 just out of Palmerston North on the back of milk proteins and is now a cornerstone of GSK (formerly GlaxoSmithKlein) with a current market value of NZ\$185 billion. Then fast forward to Kiwi Maurice Wilkins’ Nobel Prize in 1962 alongside Watson and Crick for discovering the double helix of DNA.

New Zealand pastoral, arable and horticulture farmers, backed by scientists, are great at this stuff. Plant breeding innovations have birthed new varieties such as the JAZZ™ apple and Zespri™ SunGold™ kiwifruit (145.3 million trays produced in the 2024/25 season). Our \$25 billion dairy industry is built on our growing knowledge of milk proteins that is 100+ years deep.

Today, a phalanx of new-generation companies are racing to unlock new value from the biological base of our farms, forests and oceans. Lamb stomachs were previously sold to South Asia as low-value edible tripe. Now, South Auckland-based Aroa Biosurgery repurposes those lamb stomachs as the base material for high-value human tissue regeneration products registered in 44 countries and pulling in almost US\$100 million per year. One person’s lamb stomach can be another person’s cellular matrix containing 150 bioactive molecules to help humans grow back faster.

It’s not well known that New Zealand has more people holding PhDs in life sciences per capita than almost any other country on the planet. Through our Crown-owned research centres (recently merged into one of the world’s largest integrated biotechnology organisations), these highly qualified people are spread across the motu unlocking the mysteries of milk, the magic of meat and the secrets of seaweed. Scion even has a ‘bark biorefinery’ looking to turn forest waste into high-value biopharmaceutical products.

Even our geographic isolation comes in handy. It gives us the ability to exercise greater control over what biological material comes in and goes out. Likewise, having the highest livestock disease-free status globally (free of prion diseases) and a vastly diverse plant base, rich in bioactives, means we truly don’t lack for biological source materials.

“ We’re going to need sustained boldness of scientific leadership to break out of our current regulatory straitjacket. ”

From individual brilliance to biotech machine

So we’re stacked with biotechnology strengths – the question for the next 25 years is whether we are bold enough to use them. Do we simply want our food and agri system to stay status quo? Baby steps? Or real step change? Looking around, I really believe we need the step change.

Science progresses because determined people keep going, even when the system offers almost nothing to help them grow. They collaborate to move New Zealand forward – and I jest that they do it without light, water or food.

Recently, there have been a couple of big steps in the right direction – positive steps towards a better 2050.

The creation of the new Bioeconomy Science Institute (BSI), brings the term ‘bioeconomy’ back into the national consciousness. BSI is strengthening the ecosystem. It’s working with start-ups. It’s working in synthetic bio. It’s also setting up a big bioprocessing plant.

BSI is already using gene technologies to learn about plants and how they grow. However, under the current regulations, nothing modified can be for commercial release despite finding gains in animal feed efficiency, drought and pest resistance, and increased nitrate and methane absorption.

It’s also encouraging to see we’re building biological science bench strength on the Board of Research Funding New Zealand as well as the Prime Minister’s Science, Innovation and Technology Advisory Council and the Institute for Advanced Technology. We’re going to need sustained boldness of scientific leadership to break out of our current regulatory straitjacket.



Finding a regulatory backbone

We succeed in spite of our regulations, not because of them. We've grown more risk averse as a nation. Our first question is usually about what might go wrong rather than what we stand to gain or what we risk by standing still – it shows with so much scaremongering around the new Gene Technology Bill. Despite the brave leadership shown by Minister Judith Collins, it feels like this Bill has gone to ground until the next election.

The new Bill will simply help us play catch-up to what Australia already has now. It's only 20 years behind and in the middle of updating its regulations, while we're around 30 years behind.

In 2025, Food Standards Australia New Zealand revised its definition, specifying that foods are not classified as genetically modified when the genetic change is one that could arise naturally, can be produced through conventional breeding or is created using new breeding techniques like genome editing provided no novel DNA is added. This is an incredibly sensible classification.

I believe a lot of our farmers continue to work with one arm behind their back. The inability for our farmers to use new gene technologies is not the only area that is slowing innovation. There is also a lack of urgency to get agrichemicals and veterinary drugs out to our farmers, growers and veterinarians. We're facing years-long delays in bringing products into New Zealand, including products that have been safely used overseas for years. This is not just stifling innovation but day-to-day livestock and horticulture productivity.

Moving forward

We need to consider the risk of not doing something and start looking at what the rest of the world is doing and what consumers are asking for.

Co-existence keeps coming up as a concern for New Zealand. Australia has done an incredible job saying it's for the market to choose. It has a Market Choice Framework. Instead of the government coming up with more regulations, the canola sector identified practical measures to ensure the Australian canola industry could continue to meet the needs of customers and consumers: "We want to be responsible, ethical and we want to value our neighbours and everyone around us so we're going to set good practice." If there's a GM crop next to a non-GM crop, it has to be 10 metres apart. It has all of these checks and balances through the supply chain and they're all working together. We can do this in New Zealand – driven by farmers, not government.

At the end of the day, biotech is a technology. If we're talking about biology as kind of the base of New Zealand farming, we absolutely need technology to understand our systems so much better and make them more efficient – with gene tech part of that 2050 story.

“ We need to consider the risk of not doing something and start looking at what the rest of the world is doing and what consumers are asking for. ”

The golden weather era is over



Vangelis Vitalis is Deputy Secretary, Trade and Economic for the Ministry of Foreign Affairs and Trade (MFAT) and New Zealand's Chief Trade Negotiator. He most recently led the conclusion of the New Zealand-India FTA, New Zealand-European Union FTA, Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), ASEAN-Australia-New Zealand FTA and New Zealand-Malaysia FTA as well as numerous other key trade negotiations. He has previously been New Zealand's Permanent Representative (Ambassador) to the World Trade Organization (WTO) in Geneva where he chaired the agriculture negotiations and helped draft the text of the WTO commitment to eliminate agricultural export subsidies.

The golden weather era for New Zealand trade policy from 1995 to around 2016 may be over, but New Zealand is still well placed to navigate the challenges ahead. It means we will have to adjust to a new world (dis)order and recalibrate the way we do things in trade.

The golden weather era had three distinct features – there was a set of enforceable global trade rules, protectionism was on the decline and the social licence for trade at home was strong.

It began in 1995 with the establishment of the WTO and the WTO Agreement on Agriculture. For the first time, agricultural trade was brought into an enforceable international rules-based system. For a little over two decades, those rules worked particularly well for New Zealand. We took and won cases against the US, the EU, Australia and most recently Indonesia, providing lasting benefits for New Zealand exporters.

These rules also helped drive down protectionism over the two decades, which was further reduced by our activist FTA policy.

Social licence for trade policy was also, on balance, positive. New Zealanders generally believed trade and trade agreements were a good thing, with more than a quarter of our jobs depending on exports. Our two major political parties showed bipartisan support to ratify a series of major trade agreements with China, ASEAN nations, the CPTPP countries, EU and others.

More recently, the golden weather has ended. There has been a loss of enforceability of the rules, protectionism is back and the social licence for trade agreements is fraying. The jungle is growing back over the rules-based trading system. This is not a counsel of despair. It is a diagnosis of a new reality. It means we have to think differently about how we protect the remaining rules. What kind of fences can we build to push that jungle back and who with? In doing so, we need to take account of three scenarios for New Zealand's trading future.

“ Each of the major trading powers is increasingly prepared to step outside of what's left of the rules to protect its own interests. ”

Three possible scenarios for global trade

The first scenario is a disintegration of the rules-based trading system.

Unfortunately, there is evidence of accelerating disintegration. The recent WTO Ministerial Conference in Cameroon ended in disappointment. While more than 160 of the 166 WTO members agreed to keep prohibiting tariffs on digital trade, a small handful were able to block continuation. This collapsed the wider WTO talks. Combined with the continued block on appointing judges to hear appeals in the WTO, the system is teetering. Each of the major trading powers is increasingly prepared to step outside of what's left of the rules to protect its own interests.

Protectionism is back. Tariffs are in vogue for the big players – and with a vengeance. Agricultural subsidies are on the rise, when they appeared to be declining for good less than 7 years ago. The return of activist and lavishly funded industrial policy looks a lot like protectionism to a small export-dependent nation like ours. There is no mistaking the intent of 'America First', the 'Make in India' policy and the EU's doctrine of 'strategic autonomy'. China, too, has its dual circulation theory, which is about becoming self-sufficient.

The second scenario is fragmentation and regionalisation. New Zealand is well placed through the FTAs we are a part of, including the Regional Comprehensive Economic Partnership and CPTPP. But it also shows in the ones where we don't enjoy a seat at the table such as the South American trade bloc Mercosur, the EU as a major trading bloc and the USMCA (US-Mexico-Canada Agreement). Our challenge is that our exports are not regionally concentrated. Nor would we want them to be. We need access to all of these regional blocs.

The third scenario is the collapse of multilateralism to be replaced with plurilateralism.

The days of WTO deals that cover 166 members, including all the major trading players, may be over. For instance, the recent WTO Ministerial Conference in Cameroon broke new ground when 66 members announced the Electronic Commerce Agreement. In short, things can still get done under this scenario, even if we wished it would involve the full 166 country WTO membership.

What can New Zealand do about these three scenarios?

A three-part New Zealand strategy to manage the world trading (dis)order

We have agency here, and we're not alone.

Our three strategic responses to the end of the golden weather era are to pursue rules, resilience and innovation.

First, we will continue to build more rules by relying more on our bilateral and plurilateral trade negotiations and less on the WTO negotiations. This includes negotiating more new trade agreements like the New Zealand-India FTA and the New Zealand-United Arab Emirates Comprehensive Economic Partnership Agreement.

The second strand of the strategy is about resilience. This includes improving how our existing network of FTAs are implemented to maximise the benefits of the agreements we already have, expand their membership and upgrade them to keep pace with modern developments such as digital trade. We also need to enforce our rights through these international trade treaties. We are serious about defending our hard-won negotiated outcomes – as Canada discovered when we won the case we took through the CPTPP.

Resilience includes how we think in new ways to secure our supply lines and protect economic security, not least with fuel as we discovered during the crisis in the Middle East. The Agreement on Trade in Essential Supplies broke new ground when Singapore and New Zealand agreed to waive WTO rights to impose export restrictions on each other during a crisis. This is one way of ensuring that fuel and other critical inputs for exporters such as plastics, fertilisers and so on can continue to flow. Building resilience means government agencies working together to support New Zealand exporters internationally through activities like MFAT's market intelligence reporting, our tariff finder tool and pushing back on non-tariff barriers and other discriminatory restrictions on trade.

The third component of the strategy is innovation. As a small state, we must be activist and innovative to retain agency and preserve our ability to shape our external trading environment. When the larger countries step away from the rules, we can still work together with other small and medium-sized states to sustain rules among ourselves. For example, New Zealand's initiative – led by the Prime Minister – for a CPTTP-EU dialogue is trying to break the idea of regionalisation and fragmentation, and the 12-member CPTTP (originally created as the P4 by New Zealand, Singapore, Chile and Brunei in 2004) is expanding rapidly with more than 10 accession requests in the pipeline.

This is complemented by another innovation by small countries (New Zealand, Singapore and Chile) – the Digital Economy Partnership Agreement. Korea is now a full member, Costa Rica and Peru are about to join and accession requests are in the double digits for an agreement that has been shaped and moulded by New Zealand. We know that embracing digital trade can reduce costs for exporters by 10–20%.

Most recently, New Zealand, Singapore, United Arab Emirates and Switzerland established the Future of Investment Trade Partnership (FIT-P) group. This now consists of 16 countries working together to drive more certainty for businesses and push back against the rule breakers. We are using these coalitions to help us deliver more certain, secure and lower-cost supply chains.



“As a small state, we must be activist and innovative to retain agency and preserve our ability to shape our external trading environment.”

A nation with agency

The golden weather is over and the three scenarios for New Zealand trade are challenging for us. However, our strategic response of promoting rules, resilience and innovation mean we have the ability to drive our own destiny.

I am optimistic the strategy we have in place – alongside the quality of our food and agri sector and the work of core agencies like MPI, New Zealand Trade and Enterprise and Customs among others – sets us up to minimise that turbulence and mitigate the uncertainty out there as far as possible. We do have agency, and with this strategy, I am confident we can create new opportunities from the challenges before us.

Sustainability – same old story or frontier of opportunity?



Alyce Butler is a Strategy Partner at Deloitte New Zealand, focused on the food and agriculture sector. She grew up on a dairy farm in Taranaki and today brings extensive experience in developing strategy, facilitating strategic partnerships and leading significant change programmes in multiple global food and agriculture organisations. This includes her previous role as General Manager of Strategy and Commercial Partnerships at DairyNZ and, prior to that, her position as a Director within Deloitte's Future of Food Centre of Excellence in Amsterdam.

To anticipate the extent of change in the future, it's useful to think about the recent rate of change. Between the year 2000 and now, what's really shifted? What was important then, and how has that moved in terms of the future we imagined for a sustainable food and agri system?

We've come a long way in understanding the scale of the issue to be solved and the fundamentals of what it means to be sustainable. But to be honest, we're seeing this vision become more 'boring' over time.

The question we're facing now is how do we make sure there is a secure, long-term food source to feed our population? For example, when the Ukraine crisis hit and its strategic breadbasket was disrupted, the narrative was not "we need sustainable food". It was "we need enough food, in the right places, at the right price" – not just in Ukraine but all over the world. The same is true today with the disruption in the Gulf. A big part of sustainable food production today is the ability to respond to shocks, whether related to climate, geopolitical or economic factors. I've seen huge global companies suddenly unable to meet basic, long-term supply commitments because of unprecedented weather events and growing conditions that affect all growing regions at the same time.

Some things never change. Whether it's now or 2050, we'll need to focus on achieving sustainability objectives and, in parallel, achieve broader access, affordability, productivity, nutrition and resilience objectives at pace, because there's no other option. We only have one planet and one set of planetary boundaries, and we're already exceeding many of them. The opportunity we have now is to rethink how we achieve this in New Zealand.

Transparency through technology

By 2050, my hope is that farmers will be seen as the heroes they are – producing sustainable, nutritious food and creating economic opportunities for our people and our country.

In this, our pastoral system is our greatest competitive strength. We need to maximise it by using technology for a risk-based approach, not a one-size-fits-all sustainability approach. The outcome would be maximising productive value where we can and protecting and improving the environment where it is needed.

“Our pastoral system is our greatest competitive strength. We need to maximise it by using technology for a risk-based approach, not a one-size-fits-all sustainability approach.”

I'm fascinated by any technology that can triangulate environmental, production and financial goals. For example, wearables – such as those created by New Zealand tech company Halter – are a step to achieving this as part of wider farm management systems. If integrated well with other technologies and good farm management practices, they present a strong opportunity to significantly improve productivity, sustainability, transparency and profitability.

Using technology to verify what has happened in the value chain is important. For example, in Europe, Deloitte worked on a project to set up video content analytics in slaughterhouses to automatically detect and report any deviations from humane slaughter. The project was proactively commissioned by a global meat company, with the definition of 'good' set by an animal welfare NGO and based on market expectations. This model of external and market-driven standard setting, technology-driven verifiable data and efficient compliance could be interesting here and is already emerging in places. This type of model can also form the basis for incentive structures.

Speeding up adoption

It's less relevant which technologies will emerge. What's more relevant is whether our people and our systems can quickly and effectively stack them together and take them up to realise the opportunity.

Food and agri has been slow to reap the benefits of the digital revolution. The most interesting innovations we're seeing today have been around for years in other industries. We need to speed this up in the next wave of development, especially with AI.

The new generation of farmers coming through as part of sector-wide succession are increasingly tech savvy, knowledge seeking, curious and more environmentally aware. They grew up in a digital age and know how to get information. It's a huge opportunity to create a wave of improvement and not just follow what our parents did over the last 25 years.

“We have lots of organisations and people who are pretty good at many things. We need more who are excellent at a few things.”

Incentives are starting to come through for farmers on sustainability metrics. Banks overlay profitability potential with climate change adaptation and greenhouse gas profiles. Lending and processor incentives are starting to drive land price changes.

By using these levers in the broader food system, we will increasingly make food in the right places in the right way to maximise that value. This will mean intensifying production in some places with fewer natural restrictions while also using the tech at our fingertips to have mitigations in place where they are needed. There is huge value in terms of making more data-driven decisions on the farm to maximise production within a better environmental footprint.

Sometimes compliance technologies can be used like a Trojan horse to get farmers to pick up technologies and use them for other more value-add purposes. The trick is doing it in a way that doesn't leave farmers feeling that they're not in control of their own enterprise. They're entrepreneurial people. It needs to be their choice, obviously with a regulatory baseline, to pursue sustainability initiatives and decide where they want to sell their produce.

How do we create the technologies and the right incentives while still making farmers love what they do – and being successful in doing it? Without this kind of farmer-centric approach – farmers wanting to be farmers, other people wanting to be farmers – our entire food system falls down.

Beyond the jack of all trades

Strategic focus remains an Achilles heel for the New Zealand food system. Compared to Europe, we don't claim our space and then connect with others.

We have lots of organisations and people who are pretty good at many things. We need more who are excellent at a few things. We need those with specialisms to constantly get better, in line with international pace of change, and then connect more efficiently with each other so that the entire system improves. If everyone is trying to do everything, we're not naturally going to evolve at the pace global technology advancements potentially enable.

Industry-good (farmer) organisations can also have an essential role. Having a collective voice ensures farmers are at the table in critical conversations about the future. The 6-year levy cycle is a good one relative to our political and commercial cycles. To take advantage of those cycles, any industry-good effort has to be future-focused, evidence-based and able to connect with the rest of the ecosystem – government, industry and science – to drive change. We must never walk alone.



Unlocking the potential in our whenua



Arama Kukutai (Ngāti Tipā, Ngāti Maniapoto, Te Aupōuri) has been an agribusiness entrepreneur for more than two decades and global thought leader in agrifood sustainability and investment trends. He is Chief Executive Officer of Plenty and co-founder of pioneering agritech venture fund Finistere Ventures. He was previously Executive Chairman of PKW Farms and a lead for New Zealand Trade and Enterprise in North America.

When I went to California in the year 2001, Te Puni Kōkiri | Ministry of Māori Development and economics consultancy BERL estimated the value of Māori assets at around NZ\$2 billion. 25 years later, it's \$126 billion, including Māori entity commercial assets of around \$41 billion. There's a big delta between that and the original \$2 billion, plus around \$3 billion of Treaty settlements in that time.

The Māori economy is very strong in food and fibre, but the fact is that the country's biggest land base remains minimally invested and unrealised with enormous potential. With nearly 1.6 million hectares under Māori freehold title, you could say that Māori entities remain dirt rich and capital poor.

Waking the giant

More than a million hectares of land is an incredible resource for driving growth to the benefit of not just Māori but the wider economy. Although Māori land title remains a Gordian knot, it's an area that's overdue for better engagement with the private finance sector. Much of this whenua is in the care of perpetual trusts where the trustees act on behalf of a large number of beneficiaries. The trustees take a blend of kaitiakitanga (guardianship) alongside a development approach, and the ability to mortgage or sell whenua Māori is a major factor limiting growth economically.

I believe we can do both and need to be more innovative about partnering with private capital. We see the potential growing every year in the Ahuwhenua Trophy – the annual

“The Māori economy is very strong in food and fibre, but the fact is that the country's biggest land base remains minimally invested and unrealised with enormous potential. With nearly 1.6 million hectares under Māori freehold title, you could say that Māori entities remain dirt rich and capital poor.”

showcase of Māori farming pride and potential. We also see it in examples like Parininihi ki Waitōtara – a comprehensive agribusiness company encompassing dairy, sheep and beef, crayfish, horticulture and a Māori co-investment fund, operating 30 farms with a total land base across 20,000 hectares and embedding strong sustainability principles at every level.

Another example is Te Awanui Huka Pak – a Tauranga horticulture business delivering on the aspirations of around 16 collaborating trusts with around 600 hectares of kiwifruit under canopy and one of the largest players in our burgeoning kiwifruit industry. There are many others representing owners and iwi across the nation with exciting and noteworthy Māori trusts that are not household names doing amazing things, especially in primary industry.

The private banking sector can do more to figure out how to bank and lend capital to Māori. Traditional financing models requiring cross-securitisation and default/sale provisions do not work for Māori land. There are around 300 Māori incorporation and whenua Māori trusts that make up the bulk of this land resource. Many are members of the Federation of Māori Authorities, which has a key role in promoting more capital development.

Te Tumu Paeroa | Office of the Māori Trustee looks after around 70,000 hectares of mainly fragmented land with many beneficial owners – many can't be located and haven't succeeded to their interests. It plays a trusted role and has launched innovative programmes like Huakiwi, matching Māori land with investors and partnerships. It can be a complex landscape for non-Māori to understand, but this is also part of the opportunity for those like Rabobank making the investment of time and effort.

The issue of generational succession is not novel to New Zealand. For example, there are 2 million family-owned farms in the US but only around 100,000 active farming businesses. The US Department of Agriculture estimates more than 60% of farmland is now leased, with independent capital coming in to operate and invest and get a return on the land.

I see opportunities for Māori to play a diverse role in farming as the operator, acquirer, lessor and downstream partner, particularly with the generational succession expected over the next decade as current Kiwi farmers retire or consider exit options. Māori entities are oriented to the long term. As sophistication builds, I believe we will be (and are) seeing alternative funding models and partnerships that generate access to global capital markets.

Getting braver

Even if the current land title structures have been slow to evolve, there is room to add layers of entrepreneurship. Another important factor to consider is Māori demographics – 70% of the population is aged 30 or under. That's in contrast to the rest of the New Zealand and other OECD economies. We have a store of young Māori talent with potential for leadership and skill development to attract into the food and fibre sector and make sure it's seen as exciting and cool to be part of.

The next generation can be leaders in advanced technology such as genetics, innovations in farm land productivity, reduction of climate change impact and more. The combination of robotics and AI is going to reduce labour while lifting insight and intelligence. In New Zealand, we are seeing great advances in agritech. The reset of the science, innovation and technology sector is the most profound in the last 30 years. New Zealand has lagged behind other countries in adopting technology to benefit industry, and our productivity measured in GDP per filled job can be in part blamed on our lack of investment and success in commercialising science. Māori are stepping into this sea change and will be essential to reversing the slide.

Across the motu

Climate change isn't coming – it's here. Weather is the biggest risk to farming. The US has federal crop insurance with a US\$10–12 billion premium per year. In New Zealand, we have insurance pools funded by the grower – we need a better approach for managing risk. I think we're going to see an increase in covered cropping and vertical farming along with fintech innovation to manage crop loss risks.

Climate impact is an opportunity for New Zealand to figure this out. At the moment, the Emissions Trading Scheme (ETS) is mostly seen as a tax, not an opportunity. Voluntary carbon markets are a big opportunity. The ETS market in Europe is worth \$1 trillion in traded carbon. Obviously, we have a small impact on global carbon dioxide emissions, but we can be a leader in the use of tech and new markets as we develop new innovations we can take to the world.

Adding an F

We already have food, fibre and fishing. This fuel crisis should bring us to ask whether we need to add another F – advanced fuels. We currently import \$1.3 billion of aviation fuel and similar amounts of diesel. As a country, we need to seriously explore whether we can gain greater resilience and independence in this space – for example, with bio-based sustainable aviation fuel. We have the feedstock and we need to develop access to the technology. Only 1% of the world's aviation fuel is biofuel, but this will be changing as nations evaluate their energy strategies. We could become independent and even an exporter of jet fuel if we can figure out how to unlock our natural resources and attract talent and capital to diversify our primary industries as Māori.

We are in a world of unprecedented change and challenge but also opportunity. As one generation prepares for retirement, another prepares to take up the reins to lead.

Optimism is not enough – why the future of food and agriculture depends on what we do now



Wendy Paul has more than 25 years' experience across multinational organisations, joining Growing Future Farmers after 18 years with dairy co-operative Fonterra. During her time at Fonterra, she held senior roles spanning supply chain, customer services, sales, risk management, crisis response, governance, brand and reputation management, and organisational change, most recently serving as Director Culture and Wellbeing, where she led the reset of the co-op's purpose and cultural transformation. She has held several board roles, including with the New Zealand Defence Force and Veterinaryfirst Limited, and also volunteers with Springboard Trust, supporting school principals with strategic planning.

I am optimistic about the next generation of farmers and food leaders coming through New Zealand's food and agriculture sector. I see their curiosity, their openness to change and their willingness to think differently about how food is produced, valued and connected to people's lives. They understand sustainability as a baseline, not a trade-off. They are comfortable with technology. They care about purpose as much as productivity.

But optimism alone will not carry this sector to 2050.

Without deliberate action now to build a co-ordinated approach to people, skills and leadership, that optimism risks becoming a moot point. The sector will not fall short because of climate, technology or global demand. It will fall short because it did not put the right systems in place to support the people who were ready to lead it.

Plenty of activity, little alignment

Today, New Zealand's food and agriculture sector operates without a shared workforce strategy and without clear ownership of succession across farming, food science, innovation and leadership. Education providers, industry bodies and government agencies are all active but largely in parallel. There is widespread recognition of the challenge but no single point of accountability for solving it.

From the outside, the sector still appears robust. Export volumes remain strong, innovation continues in pockets and farmers keep producing. But beneath that surface activity sits a structural weakness. We are not deliberately developing the people system that will be required for the next generation of food production.

The opportunity ahead is real. Global demand for healthy, sustainably produced food continues to grow, and New Zealand is well placed to contribute. But the future of food will not be defined by volume alone. It will be shaped by value, by innovation and by our ability to connect food with health, sustainability and changing consumer expectations. None of that happens without capable people.

Across the country, there are individuals working on functional nutrition, new food formats and advanced production systems, while younger farmers are already thinking differently about environmental stewardship and animal welfare. New Zealand's size allows ideas to be tested quickly and proof points to be built – but too often, those ideas struggle to scale.



“ One of the most accurate descriptions I have heard is that the plane is already flying. It just has no compass. Nobody is talking to each other, and no one is quite sure where we are heading. ”

I see this first-hand every day working alongside farmers, producers, researchers and students. Talented innovators develop concepts locally, push hard to make them work and then hit the limits of a slow, fragmented system. Eventually, many are picked up by larger overseas firms with deeper resources. When that happens, New Zealand does not just lose people. It loses momentum, experience and future leadership.

Innovation works – but scepticism persists

At farm level, the same pattern plays out. One Canterbury dairy farmer recently invested in camera technologies and wearable collar technologies for his herd. Initially, the technology only seemed to provide a break-even return, but it was not until collaboration with other farmers, development of people capability on farm and input from industry professionals that rapid and very profitable progress was achieved. The key point here is that technology, with the right people enabled, allows the farmer (and by default our industry) to spend less time anchored in the day-to-day menial tasks. That time and effort can then be put into strategies that drive productivity and profitability and provide work/life balance for our farmers.

His experience is not unusual. What is unusual is how slowly these proven innovations spread. Multiply that kind of gain across thousands of farms and the opportunity becomes obvious, but adoption remains cautious, incremental and dependent on who is willing to go first.

Short-term political cycles add to this uncertainty. Farmers are alternately praised as economic contributors or framed as environmental liabilities, depending on the mood of the day or the make-up of government. Obtaining any form of political consensus would help to reduce that volatility, thereby building confidence and encouraging long-term investment, precisely when the sector needs this stability to support succession and innovation.

One of the most accurate descriptions I have heard is that the plane is already flying. It just has no compass. Nobody is talking to each other, and no one is quite sure where we are heading.

Alignment within the sector would address this problem. Advocacy requires a unified voice across the various industry subsectors and competing priorities. Leadership groups need to recalibrate to better reflect the future rather than the past. Collaboration needs to move beyond discussion to a formal structure that creates shared momentum or accountability.

The missing piece of the puzzle

At the heart of all this is the need for a coherent talent pipeline.

Succession is no longer automatic. Children are not necessarily taking over farms. Land is being sold or converted to forestry. Entry pathways are narrowing even as workforce shortages become more visible. In parts of the sector, hundreds of entry-level roles sit vacant, while only a small fraction of farms are actively willing to take young people on and invest in developing them.

We talk about labour shortages – we are far less willing to talk about shared responsibility for growing capability.

Reliance on overseas labour further masks the problem. Migrant workers play an important role, but this approach addresses short-term gaps without building long-term continuity. It does not create future leaders, pathways to ownership or succession options.

By contrast, when young New Zealanders are mentored and supported, they become candidates for management, equity and long-term involvement. That distinction matters.

A sector that makes this pivot towards long-term labour solutions will be operationally robust by 2050.

To achieve this, what is needed is a deliberate, co-ordinated approach to developing people – one that treats talent as a strategic asset rather than an operational input.

When young people are immersed in real-world environments, supported by mentors and exposed to the full system around them, development accelerates. Confidence grows. Career trajectories change. These approaches already exist in pockets, but we need to do more to help them scale.

There is currently no single point of accountability for the future workforce of New Zealand's food and agriculture sector. Without leadership and alignment, effort remains fragmented and progress uneven.

Turning optimism into action

Despite these challenges, my optimism remains.

The next generation is capable, values driven and open to collaboration. They are not waiting to be convinced that change is needed. The risk is that the system around them does not change fast enough.

If New Zealand wants a resilient, innovative food and agriculture sector in 2050, optimism must be matched with action – through clear pathways, co-ordinated leadership and sustained investment in people at every stage of the system.

Because the future will not organise itself.

And without deliberate action now, the promise of the next generation will remain just that: promise, unrealised.



Building capability for New Zealand horticulture's future



Kate Scott has been Chief Executive Officer of Horticulture New Zealand since October 2024. She has worked in agribusiness for over 20 years and has significant experience in resource management, environmental policy and planning, and stakeholder engagement, including as Executive Director of environmental consultancy Landpro and founder of GroundHQ. She chairs the New Zealand Rural Leadership Trust and has previously held governance roles with Thriving Southland and WAI Wānaka. She was a Nuffield Scholar in 2018 and is a previous recipient of the Rabobank Australia Emerging Leader award.

In horticulture, succession is often framed as a discussion about land, ownership and what happens to assets over time. Those questions matter, but they are only part of the picture and they can distract from a more fundamental issue facing the sector – how well we are preparing for the next 25 years. The road to 2050 will be shaped not just by who owns farms but by whether we build profitable, resilient, growing businesses that can invest in people, innovation and new ways of working.

Looking ahead, there is genuine opportunity for New Zealand growers. Global consumers are paying closer attention to health, sustainability and where their food comes from, and our sector is well placed to respond. We already produce food that feeds families, aligns with changing diets and carries a strong story of origin, which creates space to move beyond selling raw product alone towards functional foods, nutrition-led innovation and higher-value exports that connect horticulture more closely with food science and health outcomes.

We are already seeing early signs of what this could look like, from Zespri's work securing health claims and opening new value pathways for kiwifruit to Māori growers taking indigenous kiwifruit branding into international markets such as Dubai. Together, these examples point to where future growth could come from, but turning promise into scale will require sustained investment, stronger technical capability and greater confidence across the system.

Capital intense

None of this happens without profitable growing businesses. Horticulture is capital intensive and many crops require large upfront investment and long lead times before returns appear. Establishing an orchard takes years before it reaches full production. Meanwhile, growers face climate risk, labour shortages, rising costs, market volatility and immediate debt repayments in most instances. Profitability underpins all of this, and without it, growers cannot invest in new systems, adopt technology or plan for the long term. Evolution becomes something to manage rather than something to build towards.

Technology is often presented as the answer to many of the challenges facing horticulture, but its role looks very different depending on where you stand in the system. In areas such as packhouses and processing, automation and data systems are already delivering productivity gains and improving consistency. In orchards and fields, progress has been more gradual. Harvest

robotics continue to advance, but for most growers, skilled people remain the most practical and dependable option, and that is unlikely to change in the near term.

My sense is that the biggest gains will come from simpler, more targeted tools. Better data to manage climate and soil risk, digital systems that connect growers more directly with buyers and practical analytics that support day-to-day decision making are likely to have a far greater impact than complex or speculative solutions. The value lies not in technology for its own sake but in tools that reduce friction and make it easier to run a growing business well.

There are already examples of this approach making a real difference. The Carbon Robotics LaserWeeder™ uses high-resolution camera sensors and AI-guided lasers to identify and remove weeds in crops such as carrots. By targeting weeds while leaving crops untouched and soil largely undisturbed, it shows how well-applied technology can address persistent problems in a way that supports both productivity and sustainability.

Diversification on the menu

Horticulture New Zealand works with a diverse group of growers across crops and regions. That diversity brings strength, but it also brings complexity. Every grower faces a slightly distinct set of challenges, which makes collective action harder. We operate with limited resources and try to focus on the issues that matter most to growers, often balancing immediate pressures with longer-term planning. That long-term work matters, even when today feels overwhelming.

One of the biggest changes I expect by 2050 is how farms are structured. I do not think land use will look the same as it does now. Climate risk and financial pressure will push more businesses toward diversified models, where a single property may support multiple enterprises to spread risk and create more stable income. Ownership models will evolve too, with more partnerships and shared equity arrangements. Future growers may not own land outright, but they will still need strong leadership skills, commercial judgement and systems thinking.

This shift is already visible. Many young growers I speak with are passionate about horticulture but do not see a realistic pathway to owning land. That does not reflect a lack of ambition. It points to the need for better models that allow people to build careers and businesses without requiring full ownership from day one.

Growing role for Māori

Māori participation will be central to the sector's future. Since 2018, horticulture on Māori-owned land has grown significantly, and much of the sector's future expansion is likely to come from Māori whenua. Many organisations are looking to move into higher-value land use that delivers both economic returns and benefits for their communities. This brings exciting possibilities, including indigenous branding and the integration of mātauranga Māori into growing systems. It also comes with real challenges – access to finance on multiply owned land, infrastructure, water availability and governance capability. If this growth is to succeed, investment frameworks and policy settings need to reflect these realities.

Regulation plays a role here too. Environmental standards matter, but overly complex systems can slow progress and discourage innovation. If we want growers to adapt and invest, we need practical pathways that support responsible change rather than unintentionally blocking it.


There is another shift that matters just as much – how growers see themselves in relation to one another. Often people assume their situation is unique, but when you step back, the same themes appear across crops and regions – labour, climate risk, compliance and succession. These shared challenges mean there is real value in learning from each other. Collaboration does not remove competition. Growers will always compete in markets – but working together strengthens influence, spreads good ideas and helps the sector speak more clearly when decisions are being made.

Leading with intent

My concern is that, without clear intent, the sector risks simply drifting forward. Growers are under constant pressure, policy settings change with each government and markets continue to shift in ways that are often outside our control. If we are not deliberate about where we are heading, the future will arrive by default rather than by design.

There is still a choice to be made. We can allow consolidation and structural change to shape the sector around us, or we can actively build a future that supports a broader range of people, invests in capability and keeps growers at the heart of New Zealand's food system. This is not just a question of who owns land but of whether horticulture remains an attractive and viable option for young people who want to lead, innovate and build long-term careers. That, in turn, depends on sustained investment in education and training across technology, agronomy and post-harvest skills as well as continued growth in Māori participation as a core part of the sector's future.

The decisions being made now – policy settings, investment priorities and how we support people and work together – will shape what horticulture looks like in 2050. My hope is that those stepping into the sector in the decades ahead do so with confidence, feel supported in their work and understand that what they do matters not only to their own businesses and families but to Aotearoa's role in feeding the world.

An aerial photograph of a farm. In the center, there is a blue tractor with a red top, facing away from the camera. To the left of the tractor is a wooden shed with a grey roof. The surrounding area is filled with green vegetation and rows of orange flowers. The image is oriented vertically on the page.

“ If we are not deliberate about where we are heading, the future will arrive by default rather than by design.”

Substantiating sustainability proof points will strengthen New Zealand strong wool's comeback story



Rosstan Mazey is Chief Executive Officer for WoolWorks, operators of two of the world's largest wool processing facilities. He has extensive experience in the New Zealand wool sector and plays a key role in engaging with industry participants throughout the supply chain, from farm right through to market. He is Chair of the National Council of New Zealand Wool Interests and sits on the International Wool Textile Organisation Executive Committee. These involvements build on a previous career with Wools of New Zealand, T&G, Zespri, Dairy Crest and Goodman Fielder.

Global changes to the way textile sustainability is measured and proved is poised to further support the resurgence of the New Zealand wool sector after it has experienced a challenging few decades.

Despite the remarkable sustainability attributes of New Zealand wool, the sector has been hobbled by the way the life cycles of textiles are measured. That's set to change.

Legacy methodologies for analysing product life cycles were initially designed for oil and polymer-based synthetic textiles. They were not intended for wool. The goalposts were set too narrow to capture the inherent sustainability attributes in the way wool is grown, reused and ultimately reintegrated to the environment compared to oil-based fabrics and textiles.

New Zealand has been helping drive changes in the life cycle assessment (LCA) methodology for wool through our membership of the International Wool Textile Organisation (IWTO) – the global authority for standards in the wool textile industry. The IWTO's new biogenic carbon LCA methodology has recently come through rigorous scientific and industry peer review. Now the IWTO is conducting on-farm case studies across key wool growing countries, including regions around New Zealand, to validate the methodology, which takes a full farm system approach for the growing of the fibre.

By comparison, the previous methodologies took a very narrow and limited approach to recognising on-farm carbon sequestration. The new methodology demonstrates that there is a far smaller carbon footprint per kilogram of wool than previously recognised. This opens a pathway for the industry as a whole to more accurately represent wool as a sustainable and lower-carbon-intensive fibre, which in turn will support increased differentiation and value in the market. Importantly, this will align with the evolving carbon metric requirements that are being led out of the EU, with environmental product declarations and a carbon footprint number becoming mandatory for products utilised in the building sector. This includes the majority of product applications for New Zealand strong wool – carpets, carpet tiles, upholstery, acoustic panels and insulation.

These pending changes also reinforce the importance of the New Zealand Farm Assurance Programme (NZFAP) and its application to wool.

“The new methodology demonstrates that there is a far smaller carbon footprint per kilogram of wool than previously recognised.”

NZFAP has already proved its worth for meat producers. Now it's presenting opportunities for wool as a meaningful proof point, particularly in regard to traceability. The ability to connect the processed and clean wool deliveries to the originating farms is becoming more interesting to and valued by manufacturers and brands globally, particularly those in the EU, the UK and the USA.

Joining forces to move the needle

Making up less than 1% of all global fibre, the wool sector hasn't had the scale on its own to move the market.

One solution to increase market impact is recognising that wool has much in common with other natural fibres such as cotton, hemp and jute. Wool is leading significant collaborative initiatives to strengthen the collective natural fibre voice to improve fact-based positioning relative to synthetic and biosynthetic materials.

Market movements

China is currently the largest market for New Zealand wool, taking around 35% by volume.

In the future, it's possible that some of this volume may pivot to Southeast Asia, where Vietnam and Bangladesh have existing strengths in fine wool manufacturing and as some carpet and rug manufacturers potentially shift out of China in pursuit of lower-cost manufacturing environments.

Taking 30% of our wool clip – and growing – India is our second-largest market. Prime Minister Modi has been open about his aspirations for an increasingly larger textile manufacturing sector, and New Zealand is well positioned to play an increasingly significant role with our high-quality clean scoured wool, also powered by the recent free trade agreement.

European markets take over 20% of our wool volume, with a particular concentration in Lithuania where a large number of spinning and carpet manufacturers have clustered.

Manufacturing comeback

Excitingly, New Zealand is currently seeing a resurgence of downstream manufacturing – for example, in new products for commercial buildings such as wool insulation batts. There is real demand following other successful recent innovations. An example is 100% wool acoustic panels that benefit from wool's natural attributes – sound absorption, temperature and humidity modulation and providing a great natural substrate for colourways, texture and design.

To enable current and ongoing product innovation, development and manufacturing, wool scouring capacity in New Zealand needs to remain a keystone piece of infrastructure. Essentially the 'cleaning the wool' enables the fibre to be manufactured into an evolving range of valued products. Without this processing capability residing in New Zealand, it would be very challenging to viably sustain a myriad of manufacturers, including the large carpet companies Bremworth and Godfrey Hirst.

New Zealand is renowned for being a safe place for growing animals and food products with a perception of natural production systems. The New Zealand provenance story will continue to serve the country well – but it is not enough.

As a sector with substantiation, we need to continue to build out and strengthen proof points like the NZFAP and the IWTO biogenic carbon LCA to support the positives related to the world-leading farming systems from which we grow our wool. Globally, we are getting ourselves better organised as a sector, and through this collective effort, farmers are set to receive more value for the fibre that they are growing. This builds on the recent dramatic improvement in wool prices that has been supported by increased consumer recognition of wool product benefits and ongoing tension in the supply and demand dynamic for quality New Zealand wool.

Our fibre grown in New Zealand is unique. The attributes and benefits that it brings to products and consumers globally are compelling, and we now have improved ways of representing its credentials to the world.

It's an exciting outlook for New Zealand wool.



Boxing clever for customer and consumer relevance



Brad Olsen is Chief Executive and Principal Economist at Infometrics and is one of New Zealand's leading economic commentators. He is passionate about using economics to make better-informed decisions and specialises in communicating complex and detailed trends in a relatable and useful manner. His work has been recognised with a number of business, community and leadership awards.

By 2050, I certainly hope we're a lot richer, incomes have lifted, employment has lifted and New Zealand is taken even more seriously on the world stage. We'll still be a small nation at the bottom of the South Pacific, but we can also punch above our weight with food and fibre on the world stage.

Our primary sector has grown enormously already. It's hard to continually outgrow every other industry in leaps and bounds. In 30 years' time, in a much larger economy, we'll do well to maintain the primary industry's 8.8% share of direct GDP, with an extra 6.5% from processing and marketing plus a bonus 2% GDP from the agritech sector. All this would suggest that the primary sector holds its own, even though the services sector is set to be the driver of future economic growth.

Agritech will be another big string to the bow of the New Zealand economy – both as a vertical in its own right and as a layer adding value across New Zealand agriculture. We want our country trade profile to be “we get a lot of beef from New Zealand, we get a lot of milk, we get a lot of kiwifruit and we get a lot of farming technology”.

Farmers as influencers

The future New Zealand farmer will need to not only produce quality food and fibre but also double up as a vet, a scientist, an economist and a marketer and showcase all of this through a social media presence.

As we see more competition from alternative proteins, the primary sector will need to be more vocal and visible on social media and in consumers' lives. Both here at home and overseas, everyone has a connection to the supermarket but is totally disconnected from where their products actually come from.

When I was in Korea and China last year, businesses using Kiwi products highlighted how strong a message it was to see New Zealand farming operations in real life and, through social media, get a better view of what happens on the ground before a product ever heads overseas.

My worry is that the New Zealand agriculture sector is not taken as seriously as it will need to be on the international stage when it comes to climate expectations. Big producers in Europe have highlighted their concerns that this Kiwi climate credibility gap could keep building over time.

Our primary sector needs a more coherent view on climate. We can't afford a mindset that we don't need to care about climate

because “we're too important to the economy, it's just too expensive or climate change is not a thing”. Give it time – our attitudes and actions will impact where our product eventually goes and how much we get paid for it.

Influence cuts both ways. I would like to see more opportunities for those at the grassroots level in the primary sector to get out and see markets – not just the executives in their suits but also farmers Joe and Joanne Bloggs to understand things a bit more and spread the word at home and host others coming back through to have a closer connection with international markets.

The quiet migration

Past talk of depopulation causing zombie towns in provincial New Zealand was alarmist and unhelpful. There's a different form of quiet quitting going on. For a long time, people were moving from rural to provincial and then from provincial to urban centres. In more recent times, the flow has changed.

Factors such as working from home, housing affordability and lifestyle mean people have been choosing provincial centres a bit more. But they haven't necessarily been choosing rural centres all that much more. There will be a level of hollowing out for some rural communities – not from people moving to the ‘big smoke’ but from people moving to the ‘slightly bigger smoke’.

For example, those who live in Hunterville (pop. 378) may be more likely to move to the bigger town of Feilding (pop. 17,000) rather than Palmerston North City (pop. 90,500). As people get older, they often move closer to health services or to be closer to family. Some regions will also feel the cumulative effects of extreme weather events. Along with land stability issues and coastal erosion, there are a number of areas that will become more challenging to continue farming.

Sitting alongside this, we are likely to see consolidation of processing facilities, whether it's dairy or meat, with fewer but bigger plants aiming to operate 100% of the time for peak efficiency. Obviously, this also means longer supply chains for raw product to get to the plant.

As our arterial transport links continue to improve in various ways, we will see more of these centralised operations in the right places and people effectively commuting a little bit further to them. Everyone already leading busy, expensive lives might prompt a continuation in the slowdown in population growth – by the time you've come home and your partner's come home, there's less time to think about family and kids.



“It’s often been hard to buy strongly into the “add value everywhere, all the time, all at once” mantra. Let’s be blunt. It has been challenging. But there’s the potential to do a halfway house with niche opportunities. Let’s call it interim value.”

Catching consumer waves

Over the next 25 years, New Zealand needs to latch on to a range of emerging consumer trends. We can either do this directly by creating products ourselves or indirectly by providing inputs into products that others make overseas.

Convenience is a big trend we’re seeing, particularly in parts of Asia. For example, fruit exporters tell me we export a lot into Japan, and a lot of it is going to be cut up and packaged for your 7-Elevens and other convenience stores. We need to be all over the many new forms that convenience will morph into.

There’s also big demand for protein, particularly among older populations. New Zealand needs to ask what’s the silver fox version of infant formula? Rather than ‘old age formula’, let’s call it ‘fortified drinks’. In an ageing world, there will be potential galore. There are already many options in the shops for ageing Japanese who want to repair and recover faster if something happens.

A third area is nutraceuticals – not so much fully pharmaceutical or even traditional Chinese or Korean medicine. It’s more a consumer thinking, “Here’s a product that has some good stuff in it. It’s not quite a medicine grade, but I’ll buy it because it makes me feel good about looking after myself.”

On my last trip to China, a New Zealand producer partnered up for a seasonal push on flavoured cheese. They had tomato-flavoured cheese for the top of ramen and a crayfish-flavoured cheese. Instead of 10 cheese slices in a packet, there were only three so it was premium. It was a great example of where we are showing up more strongly internationally to understand and adapt to various consumer trends.

It’s often been hard to buy strongly into the “add value everywhere, all the time, all at once” mantra. Let’s be blunt. It has been challenging. But there’s the potential to do a halfway house with niche opportunities. Let’s call it interim value. New Zealand produces some of the inputs that are then sent overseas for manufacturing into the final product. It means New Zealand needs more offshore manufacturing or stronger ties with producers overseas to convert the endless opportunity.

Embrace our collaborative instincts to nurture successful new sectors by 2050



Hamish Gow is the Sir Graeme Harrison Chair in Global Value Chains and Trade at Lincoln University. With over 30 years experience in food and agri roles in industry, government and academia, his special interests are the design of successful and enduring producer-led value chains into local, regional and international markets. He has founded programmes for building value chains, food innovation and food safety capacity in New Zealand, the Americas, Europe, Africa and Asia. This included leading the establishment of the Global Food Safety Partnership for the World Bank.

For the New Zealand economy to flourish by 2050, we need the primary industries to succeed at scale.

This will require us to drive massively increased productivity growth, not just expansion, in our big two sectors – dairy and kiwifruit. Concurrently, we will need to challenge our high-promise sectors such as aquaculture and temperate horticulture to embrace similar collaborative value chain design, innovation, marketing and regulations that have powered the success of dairy and kiwifruit at scale.

Over many years, I have seen the New Zealand collaborative approach at work on the world stage from the other side of the fence while serving with the World Bank, USAID, USDA and OECD.

Our track record as a country shows we're highly successful when primary industry sectors come together to decide how we are going to play cooperatively together and when they get government to legislate the right model.

Dairy and kiwifruit are our only value chains with robust scale and regulatory settings to ensure everyone along the whole chain plays together in the international marketplace.

“To flourish in the future, we need to rebuild industrial-strength agriculture productivity for NZ Inc. and a talent pipeline focused on market access that delivers highly talented Kiwis with deep science but also trade and global market experience.”

They're the only value chains legislated to ensure that the excess economic market rents go back to the farmers thereby driving sustained on-farm economic returns, investment and regional growth in those two industries.

It also means that dairying and kiwifruit are the main drivers of land prices and capital gains, thereby masking a lack of sustained farm-level economic rents in other sectors such as arable, wine, vegetables and, until recently, red meat.

“Our best talent rapidly rise to become leaders in industry, government and international agencies around the world. We need to enable our best talent to continue to get seats at the table so we can ensure a level playing field and impact beyond our size.”



Three-legged stool

With these collaborative strengths in mind, we need to take a three-pronged approach on the road to a thriving 2050 – grow the two existing legs of the stool while actively finding and growing a new third leg.

For the first leg, we need to double down on our dairying strengths, especially since we've become reliant on more dairy conversions rather than genuine productivity gains of late.

A sustainable, scalable, highly productive dairy ingredients business is non-negotiable. It needs to be world-class, top end. The future is getting right into it, because it's out of the components of the milk that we can do this at scale, sustainably and with the highest quality.

We should be looking at how we can double milk production by increasing productivity through designing and adopting new farming systems and technology because dairy is the only industry that has continued to deliver economic wealth to New Zealand at scale over the past 40 years. It drives our exchange rate, our economic earnings power and our wealth creation in regional New Zealand and for the urban areas too.

As part of the dairy industry leg, we also need to invest in and build a world-class, scalable, low-carbon, sustainable, pastoral-based dairy beef industry that provides highly consistent manufactured beef. The shift is already beginning, but we need to accelerate it.

The second leg of the stool is that we need to invest, build and grow temperate horticulture beyond kiwifruit. As a country, we need to go hard in temperate plants, leveraging New Zealand's natural advantages along with our disease-free status and expertise in breeding and cultivation.

There's going to be an interesting play in plants. True scale in horticultural production will be difficult, but we can uniquely position ourselves in the temperate plant breeding nursery space. Everywhere else has real disease and geographical issues, while New Zealand has a unique Goldilocks temperate location. We should be trying to leverage this and then multiply it overseas. That takes capital investment, people coming together and a courageous government getting in behind it.

Finally, we need to add a new, third leg to the stool. This could be via aquaculture in our big blue backyard. Being for the most part land-lovers, we've missed the marine wealth right under our noses from an exclusive economic zone that's some 15 times our existing landmass.

We haven't even touched the sides on sorting out aquaculture. This could go in multiple different directions. Our biggest economic area is actually the seas around us. We lead the world in ocean fisheries management, but what about deep-sea fish farming?

This is a challenge that iwi-owned organisations are well equipped to lead. My hope is that iwi start working at how they can all play together and create one big company to co-invest and embrace the opportunities.

Back to the future

The co-operative instincts necessary for success need to be nurtured by political leaders along with reinvestment in some of our public good institutions that have been on the back burner since 1984.

For 40 years, we've dined off what was built before 1984. Many of our industry leaders and scientists trained back then are now retiring and leaving, and the ones since have been in a privatised world.

We don't currently have the structured education, talent development and mentoring pathways required to go back to relationship-based international market development.

On my wish list is a much stronger engine for innovation and talent development to act as an honest broker and educator for the primary sector. As a super fan of the 'land university' model in the US and of Wageningen University in the Netherlands, I see a big need for genuinely neutral 'honest brokers' providing evidence-based education, extension and policy inputs for the industry and national good.

Taking back our superpower

New Zealand's passionate embrace of the free market since 1984 has toughened us up and made us one of the most efficient and economically resilient producers in the world. But it's been a tough nursery for sectors other than dairy and kiwifruit to strut their stuff. We are doing ourselves no favours by staying so committed to a non-intervention free market approach when our global competitors won't hesitate to use their economic incentives and regulatory power to give entire industries a push in the right direction.

Land use change has driven most of our economic gains over the past decades, not productivity gains. To flourish in the future, we need to rebuild industrial-strength agriculture productivity for NZ Inc. and a talent pipeline focused on market access that delivers highly talented Kiwis with deep science but also trade and global market experience.

Only in this way will New Zealand be able to ensure that we secure a seat at the table and maintain market access as the world looks to redesign and rebuild the international rules-based system that is under geopolitical and economic pressure of late.

New Zealanders have a unique position in the world. We are a small country with limited power but seen as offering leaders who are smart, innovative, co-operative, trusted and focused on creating a fairer playing field for all. As such, we are often seen as the honest broker or intermediary. Our best talent rapidly rise to become leaders in industry, government and international agencies around the world. We need to enable our best talent to continue to get seats at the table so we can ensure a level playing field and impact beyond our size.

Crossing the threshold – New Zealand food and agri set for new era of productivity



Ray Smith has been Director-General of the Ministry for Primary Industries since late 2018. Based in Wellington, he leads a team of over 3,500 people across 70 locations in New Zealand and around the world to enable our primary sector to become the world's most sustainable provider of high-value food and primary products. He is the Government Health and Safety Lead and has previously held a number of senior leadership roles in other government agencies.

Our biggest opportunity for New Zealand is the roughly 2 billion more people who will join the world between now and 2050. Most of this population growth will be in developing countries where there is still a lot of potential for income growth. Whether it's China, India, Southeast Asia or Africa, a growing middle class will grow the demand for red meat, dairy products, fruit and higher-quality seafood.

You then match this growing demand against one of the larger risks – climate change.

We have an advantage compared to most countries. Of course we will be affected, but as a country closer to the polar areas, we also know we're probably going to benefit from some aspects. Blessed as we are with natural resources, I am confident we can collectively work through how to manage the impacts of climate change so as not to be more badly affected by it. We are very well positioned to supply the world with more food by 2050.

Unlocking potential

As a country, we've been a bit tied down in the last 20 years managing the impact from the rapid growth of the dairy industry in particular. We have faced a range of limitations because of concerns about nitrate leaching and various other elements that came from the surge in conversions to dairying. Alongside this, our growth potential has been held back by the Resource Management Act and environmental settings that haven't recognised or kept pace with the changes in science that have happened across the 20-year period.

Through science, practice, and trial and error, we are now arriving at the point that we now know how to mitigate a large number of those risks. We're not at the end point on nitrates, but we're well on the way to solving methane mitigation with the emerging range of inhibitors. This is why we've been hell-bent on the investments in setting up AgriZero^{NZ} and other mitigating steps.

While there's going to be more people to feed and it's going to be harder for them to feed themselves, we do have the potential to grow our production without damaging the environment – in fact, possibly the opposite and improving the environment towards 2050.



“ While there's going to be more people to feed and it's going to be harder for them to feed themselves, we do have the potential to grow our production without damaging the environment – in fact, possibly the opposite and improving the environment towards 2050.”

Upcycling land uses

We're now at a threshold where we can further diversify land use again and go to the next highest-value use. We will see a shift in farming systems to create more productivity.

There's probably 30–40% more productivity we can get out of the land we currently have in sheep and beef farms. Some of that better land would probably get better revenue streams out of shifting to dairy, just as some dairy land would get much greater per hectare returns in kiwifruit or something else.

We can also move forestry up the value chain. Everything you can produce from a fossil fuel, you can produce from wood. The next decade will be the turning point where we see investment in plant to produce engineered timber and to extract oils and residues out of timber. Products may include ingredients for greener paint manufacturing and even sustainable aviation fuel. There is a different sort of future than exporting the volume of unfinished logs.

The aquaculture industry is currently worth about \$650 million, and our objective is to get to \$3 billion by 2035. It's probably an industry that should be around \$10 billion – the size of the meat industry. We have locked ourselves out of using our coastal waterways, but all of the RMA changes going through at the moment will free up the environment for us to better undertake aquaculture.

Excelling in the away game

A lot of countries export their surpluses or they are net importers of food. As very large exporters, places like Ireland and New Zealand are right at the other end of the continuum.

There's only 5 million of us so we will always be exporting. We are seen to be a very reliable trading partner that plays by the rules and has got safe products from a country that people trust.

Kiwis have always been good travellers because we've always had to. Because we have to go so far, we can't afford to come back without some sort of deal. I think we're pretty thoughtful and respectful in relationships and therefore quite non-threatening.

One of the things we're going to have to figure out how to do is to position ourselves much more strongly in the minds of coming generations of consumers to make sure we are very visible as that trusted partner.

A recent example is our grass-fed standard. A number of New Zealand companies have existing grass-fed claims on their products in international markets. But we didn't have any government stamp, which can be so useful in China and other markets. In the future, we can no longer take for granted these natural advantages that others increasingly see as being a point of differentiation. In the future, there will be more alternative sources of protein competing against our natural food systems. Having a simple system to mandate certain attributes is a way New Zealand potentially can get more value from our products and markets.

“When we're at our best, when collectively we work together on these things and collectively we go to the world, we will see amazing things happen. New Zealand has a unique proposition to take to the world.”

Elbows out

The challenge we have is not to be too shy and not to assume, because we live here and we're fortunate, that others understand. We have to get a bit better at telling our own story.

We like to talk about ourselves as being the best rugby players in the world or the best farmers in the world. I think we have been and at times we are. But don't underestimate what's happening in the rest of the world. Some of those people are moving fast to try and position themselves. We don't want New Zealand to be out-manoeuvred, and we certainly need to make sure that people know we're around, what we're about and how we do things.

When we're at our best, when collectively we work together on these things and collectively we go to the world, we will see amazing things happen. New Zealand has a unique proposition to take to the world. The next couple of decades will be super exciting.

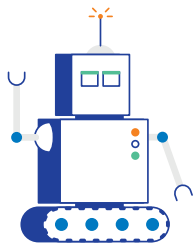


Our collective view of what 2050 could look like

AI, AI, it's off to work we go

AI platforms and AI agents can aggregate the knowledge of all farmers across all seasons, support decisions, take actions and drive profitability over time. We'll have unlimited knowledge about what decisions to make in different situations across all production systems.

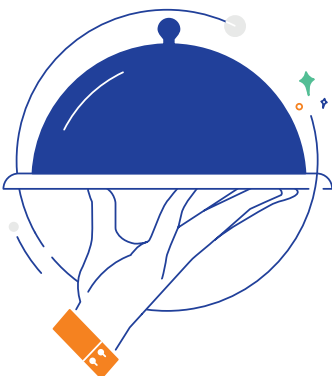
Within 10 years, expect humanoid robots to be in in our milking sheds and in horticultural use, picking, pruning and thinning. Large-scale commercial production of these humanoid robots is set to ramp up from 2028 to millions of units per annum by the end of this decade.



The future consumer is not waiting

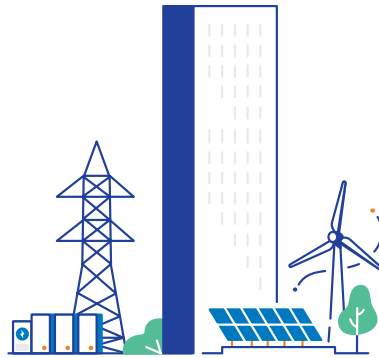
Future consumers will expect smaller portions with higher nutritional impact, foods rich in protein and functional benefits, and proof of low emissions and positive environmental outcomes.

We can already see where this is heading. China is developing rice varieties capable of delivering up to 75% of daily protein requirements in a single serving. That tells us the global plate of the future will be denser, not larger.



Feeling the energy

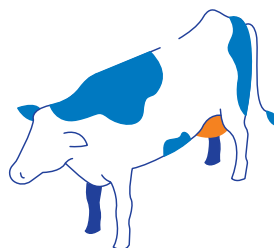
In the UK, 2 million homes now get their gas produced from animal waste through biodigesters. This could grow to 10 million homes. As New Zealand looks to transition its energy supply, we have the ability to take waste streams off farm and use them as inputs into the energy system and to place wind energy systems on farms to graze underneath them.



Rethinking what farming looks like

In 2050, we will still see livestock grazing our hills but also expect to see stainless steel vats sitting beside paddocks, producing protein through precision fermentation while animals continue to graze. Farmers will be earning income from both systems, using less land to produce more nutrition.

This is not about replacing pastoral farming. It is about complementing it.



Premiumisation is the way forward

Not premium as a glossy badge but premium defined by provenance, nutrient density, environmental performance and trust. Consumers will increasingly expect food to support longer, healthier lives, and many younger people already see functional nutrition as a baseline rather than an indulgence.

That means New Zealand's future is not simply exporting more meat and milk. It is about doing better with what we have rather than assuming we can always do more.



Silver tsunami

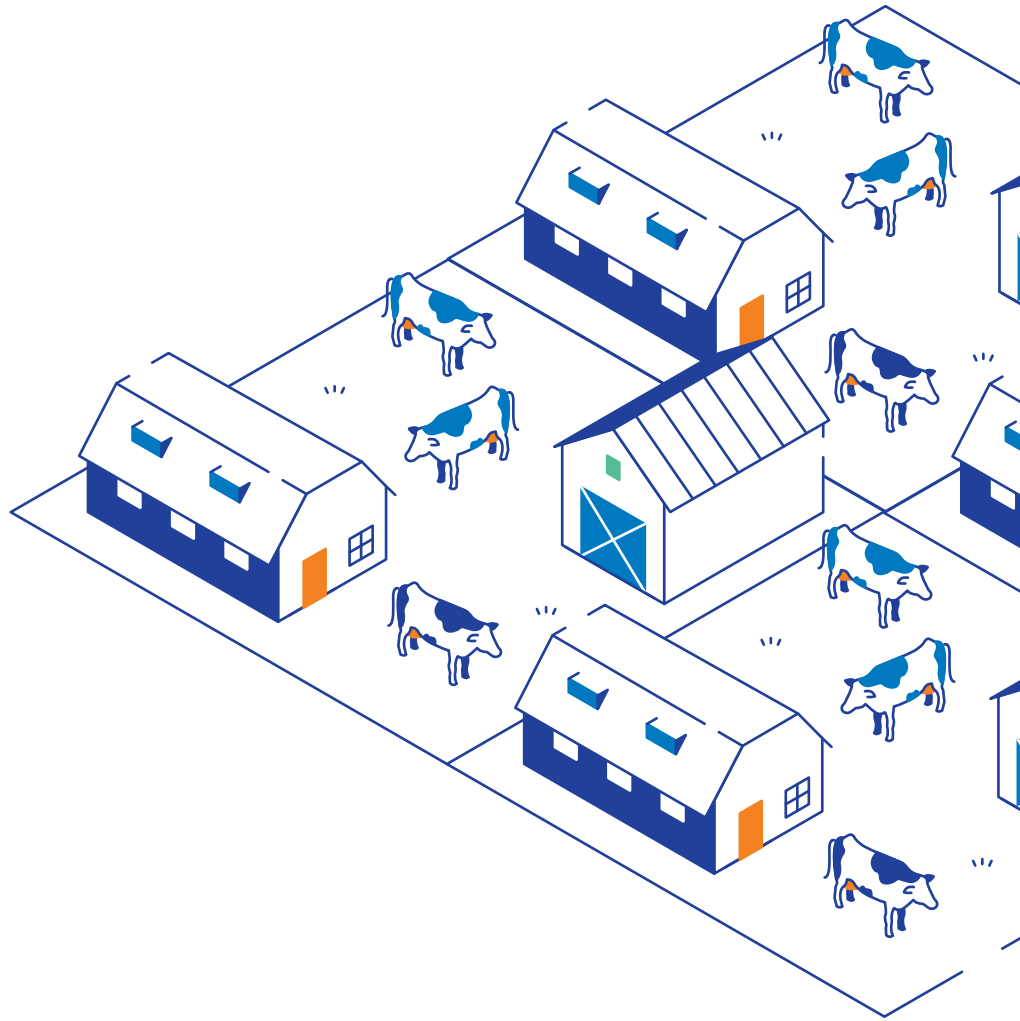
People over the age of 50 currently represent 34% of global GDP but account for 49% of food and beverage spending and 60% of health spending. By 2050, that same cohort will shift to 39% of global GDP, worth about US\$118 trillion. That's phenomenal growth.



The changing face of ownership

Climate risk and financial pressure will push more businesses towards diversified models, where a single property may support multiple enterprises to spread risk and create more stable income.

Ownership models will evolve too, with more partnerships and shared equity arrangements. Future growers may not own land outright, but they will still need strong leadership skills, commercial judgement and systems thinking.



Collaboration does not remove competition

Expect to see greater sharing of information and data.

Often people assume their situation is unique, but when you step back, the same themes appear across crops and regions – labour, climate risk, compliance and succession. These shared challenges mean there is real value in learning from each other.

Making friends with alternative proteins

The major shift that's coming is more 'hybrid' protein where, to make it more affordable, your beef patty will be maybe 20–30% plant-based and the rest is beef. It's a product that aspires to deliver the same structure and mouth feel that you get from consuming beef but with a lower footprint because of the hybrid ingredients.

Table for 10 billion

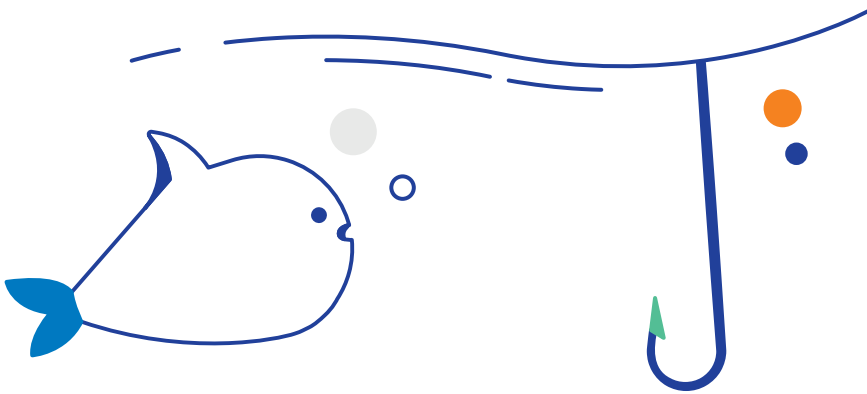
Our biggest opportunity for New Zealand is the roughly 2 billion more people who will join the world between now and 2050. Most of this population growth will be in developing countries where there is still a lot of potential for income growth.

Whether it's China, India, Southeast Asia or Africa, a growing middle class will grow the demand for red meat, dairy products, fruit and higher-quality seafood.



Making food in the right place, the right way

This will mean intensifying production in some places with fewer natural restrictions while also using the tech at our fingertips to have mitigations in place. There is huge value in terms of making more data-driven decisions on the farm to maximise production within an environmental footprint.



Delivery from the deep blue

Our biggest economic area is actually the seas around us, which we haven't even begun to tap.

Deep-sea fish farming is a challenge that iwi-owned organisations are particularly well equipped to lead. Iwi could create one big company to co-invest and embrace the opportunities.

Realising the promise of the next generation

The next generation is capable, values driven and open to collaboration. They are not waiting to be convinced that change is needed. The risk is that the system around them does not change fast enough.

If New Zealand wants a resilient, innovative food and agriculture sector in 2050, optimism must be matched with action – through clear pathways, co-ordinated leadership and sustained investment in people at every stage of the system.

Unlocking the value of our natural resources

Everything you can produce from a fossil fuel, you can produce from wood. The next decade will be the turning point where we see investment in plant to produce engineered timber and to extract oils and residues out of timber.

Aquaculture is probably an industry that should be around \$10 billion – the size of the meat industry. We have locked ourselves out of using our coastal waterways, but all of the RMA changes going through at the moment will free up the environment for us to better undertake aquaculture.



Investing in our people

We need to rebuild an industrial-strength pipeline to provide the most talented Kiwis with global experience in science and trade.

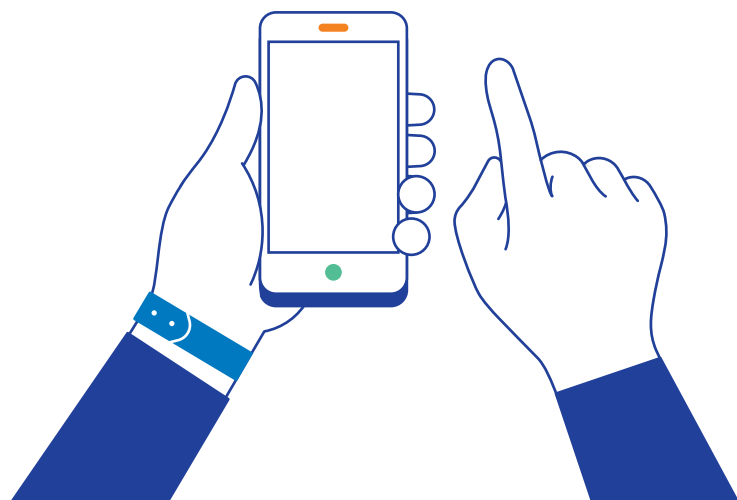
We will need to strategically invest in that group of people who understand how to take our products into international markets.

We have to benchmark ourselves against the rest of the world, not against each other here.

Speed of adoption

The new generation of farmers coming through as part of sector-wide succession is critical.

They are increasingly tech savvy, knowledge seeking, curious and more environmentally aware. They grew up in a digital age and know how to get information. It's a huge opportunity to create a wave of improvement and not just follow what our parents did over the last 25 years.



Beyond the jack of all trades

We need more who are excellent at a few things. We need those with specialisms to constantly get better and then connect better with each other so that the whole system improves.

If everyone is trying to do everything, we're not naturally going to evolve at the pace global technology advancements potentially enable.



Farmers as influencers

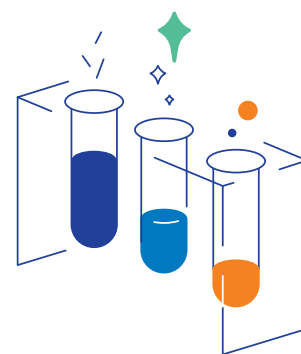
The future New Zealand farmer will need to not only produce quality food and fibre but also double up as a vet, a scientist, an economist and a marketer and showcase all of this through a social media presence.

As we see more competition from alternative proteins, the primary sector will need to be more vocal and visible on social media and in consumers' lives.

Building scientific bench strength

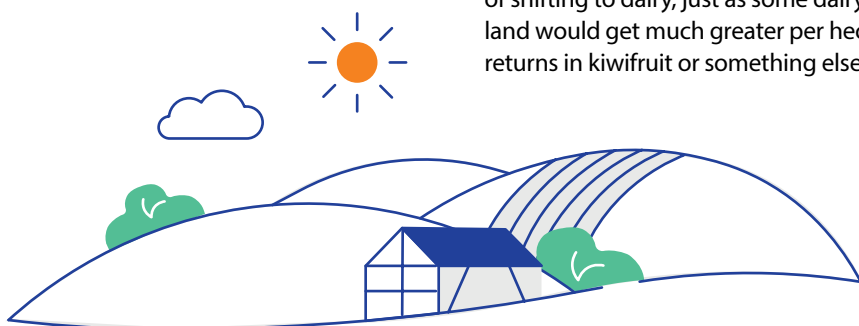
We're building biological science bench strength on the Board of Research Funding New Zealand as well as the Prime Minister's Science, Innovation and Technology Advisory Council and the Institute for Advanced Technology.

We're going to need sustained boldness of scientific leadership to break out of our current regulatory straitjacket.



Capture the true sustainability premiums for New Zealand wool

New Zealand needs to get out in the world and help move the goal posts so that global methodologies for measuring sustainability recognise the full before and after environmental benefits of wool compared to synthetics.



Upcycling land uses

We're now at a threshold where we can further diversify land use again and go to the next highest-value use. We will see a shift in farming systems to create more productivity.

There's probably 30–40% more productivity we can get out of the land we currently have in sheep and beef farms. Some of that better land would probably get better revenue streams out of shifting to dairy, just as some dairy land would get much greater per hectare returns in kiwifruit or something else.

Riding the GLP-1 train

The new GLP-1 (weight loss) medications have the potential to change eating habits and the way people consume – in a positive way for red meat, dairy and fruit exports from New Zealand.

We expect a larger uptake of high-quality protein and fresh produce in the new diet mix as well as food manufacturers changing the make-up of their products to adapt to the consumer impacts of these GLP-1 type of drugs.



Key changes our experts want to see between now and 2050



Be more agile/aggressive in R&D investment and commercialisation to stay ahead of alternative proteins. **(Arama Kukutai)**



Be proactive early adopters of new technologies (AI platforms/agents, robotics, biotech) – “go get them” rather than waiting for solutions to arrive in New Zealand. **(Jarred Mair)**



Build a future-fit regulatory environment that enables innovation, including gene technology settings and practical coexistence (market choice) frameworks. **(Zahra Champion)**



Work backwards from what future consumers want (nutrition, transparency, environmental impact) rather than optimising “yesterday’s model”. **(Victoria Hatton)**



Unlock the “big blue backyard” – treat aquaculture/marine wealth as a major growth leg and support iwi-led co-investment models. **(Hamish Gow)**



Develop a co-ordinated, owned workforce/talent strategy for the sector (clear pathways, leadership, accountability). **(Wendy Paul)**



Retention of wool-processing capacity in New Zealand – this is vital to support the resurgence of onshore manufacturing. **(Rosstan Mazey)**



Use a strategy of bilateral/plurilateral deals, enforce existing agreements and build coalitions with other small and medium states to protect market access in a more protectionist, less rules-based world. **(Vangelis Vitalis)**



Get more young Māori into food and fibre and into developing/managing advanced agri technology. **(Arama Kukutai)**



Treat talent as a strategic asset and build/scale mentoring + real-world immersion models to develop future leaders. **(Wendy Paul)**



Enable coexistence/practical “market choice” frameworks (clear good-practice rules that allow GMO/non-GMO to operate). **(Zahra Champion)**



Move faster towards deliberate tech adoption, especially AI (system + people readiness to take innovations up quickly). **(Alyce Butler)**



Shift from volume to value (premiumisation) – increase value per unit through provenance, nutrient density, trust and environmental performance. **(Victoria Hatton)**



Rebuild a national pipeline of globally experienced science + trade talent (strategic investment in people who take products to market). **(Hamish Gow)**



Use technology to enable transparency/traceability and verification (risk-based sustainability approach, trusted third-party data). **(Alyce Butler)**



Unlock under-realised Māori land potential by enabling investment/capital and evolving models while respecting kaitiakitanga. **(Arama Kukutai)**



Show up more strongly in-market to understand consumer trends and adapt offerings/partnerships accordingly. **(Brad Olsen)**



Go hard on temperate horticulture beyond kiwifruit leveraging disease-free status, breeding and cultivation expertise. **(Hamish Gow)**



Scale proven innovations faster via alignment and collaboration structures across the sector (unified voice, formal mechanisms for momentum/accountability). **(Wendy Paul)**



Be more visible and influential with consumers (farmers/sector telling the story and build credibility, especially on climate). **(Brad Olsen)**



Move from being “good at many things” to “excellent at a few” and then connect specialisms to lift the whole system. **(Alyce Butler)**



Continue to build out and strengthen the proof points for the sustainability attributes of wool compared to oil based fabrics and textiles. **(Rosstan Mazey)**



“Play together” at industry level (co-op instincts + enabling regulation) to build successful sectors at scale. **(Hamish Gow)**

Working together to make it happen

Rabobank New Zealand is a part of the global Rabobank Group, the world's leading specialist in food and agribusiness banking. Rabobank was set up in the Netherlands over 125 years ago as a co-operative – by farmers, for farmers. Today, it serves over 9 million customers in 34 countries, with a network of around 48,000 employees. As New Zealand's only specialist food and agribusiness bank, Rabobank New Zealand has a focus on supporting Kiwi farmers, growers and food producers. Our 530-strong team works from 27 offices across New Zealand and is deeply committed to the communities where they live and work.

www.rabobank.co.nz

