

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



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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.

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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.

