Transforming New Zealand's Food and Fibre sector for global prosperity

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Aotearoa New Zealand's Food and Fibre sector is at a turning point where change is an imperative. As the global population continues to surge, predicted to reach 9.8 billion (an increase of more than 25% from 2020) by 2050, the demand for Food and Fibre production is set to soar to unprecedented levels. New Zealand's agriculture sector is feeding approximately 40 million people globally, however there is increasing pressure to boost production by 70% by 2050 to feed the world while also facing the pressure of climate change and other challenges. This dramatic surge in demand, coupled with the urgent need to address environmental concerns and resource scarcity, requires a paradigm shift.

New Zealand, unlike most OECD developed economies, has a remarkable reliance on the Food and Fibre sector as a significant contributor to its prosperity. However, as consumers in our high-paying export markets continue to demand better transparency of social and environmental standards, the Food and Fibre sector is grappling with becoming a world-leader whilst managing increasingly high-levels of risk.

Traditionally, Food and Fibre, as a product-based sector, has relied on deriving the majority of its value from the sale of products. As countries continue to transition to more sophisticated skills and knowledge-based economies, the proportional value created by this sector is decreasing.

New Zealand is a notable exception to the downward trajectory with 6.17% of GDP directly linked to agriculture, forestry, and fishing. It is the third highest percentage contribution of GDP within the OECD and a relatively stable figure since market liberation in the mid 1980s.

As the country's largest contributor to the tradable economy, the Food and Fibre sector faces unprecedented levels of disruption, including the drive to reduce absolute GHG emissions and the economic need to build resilience in the face of a changing climate.

On top of these major disruptions, the impact of the recent severe weather events coupled with the current economic climate, are causing many to reassess our reliance on the Food and Fibre sector as a risk or failure of New Zealand to transition to more prosperous sectors.

However, there is inherent productivity in this sector that should be highlighted for its success. New Zealand's absence of government-backed price support mechanisms has clearly contributed to these productivity gains arguably at the expense of a range of external factors such as environmental degradation. Forty years on from the removal of these mechanisms the challenge is clear:

How does New Zealand's Food and Fibre sector leverage its existing product-based productivity and resources to accelerate the transition to a prosperous, skills-based, and sustainably competitive exporter?

Future prosperity for New Zealand's Food and Fibre sector could look very different to now. At PwC New Zealand we think success should involve:

- High-skilled capability – the sector is not prone to labour shortages.
- Effectively managing land-use and being radically transparent in the transformational use of science, technology and data.
- Prudent management of available capital.
- A flexible regulatory system that incentivises positive behaviour change, while supporting being globally competitive.

Overview of the sector

$56.2bn
EXPORT REVENUE

81.8%
of our **annual merchandisable** exports in the year to 31 March 2023

This ratio has increased over the past decade, with primary industry export growth exceeding that of non-primary industries in eight of the past 10 years

10.7%
of **GDP** in the year to June 2023

13.8%
EMPLOYMENT

367,000
PEOPLE

9.1%
increase in **worker counts** between 2012 and 2019 in the primary industries

41%
of farmers and growers did not 'see much value' in using digital technology in their business. **Largest barriers were cost.**

(Source: AgriTech report – 2022)

43,650
KILOTONNES (**48%**) OF GREENHOUSE EMISSIONS PRODUCED

Agriculture, forestry, and fishing is the **largest contributor** to Aotearoa New Zealand Greenhouse Gas Footprint

In **2022**, the primary industries group was the **main emissions contributor** to

METHANE
91%

NITROUS OXIDE
94%

CARBON DIOXIDE
12.6%

New Zealand is making world-leading strides forward in the Food and Fibre sector. Much of this success is the capability in processes, systems, and technology developed to turn sunlight and nutrients into a broad range of products for consumers around the globe. These include dairy, kiwifruit, apples, grass-fed sheep and beef, fibre, wine, seafood, and seeds.

This success is in spite of various challenges that have led other countries to develop their economies away from agriculture, fishing, and forestry:

- Urbanisation, demographic trends, and high costs of labour.
- Logistics costs lengthening and less realiable supply chains.
- Environmental regulations (although these are now being introduced in New Zealand as well).

Various challenges are increasingly straining the ability for the sector to evolve and prosper, with their influence increasing. These include:

- **Chronic underinvestment, combined with duplication of effort and limited public funding for research and innovation**
  These are starting to impact areas that a No. 8 wire approach can not fix. Of paramount importance is the need to solve New Zealand's unique methane emissions problem.
- **Limited willingness to adopt technologies is impacting the viable pace of change**
  There is a long tail to the adoption curve, with a strong resistance to embracing or investing in change.
- **Gaps in relation to risk management are limiting growth and the availability of capital investment, particularly in innovation**
  This was highlighted by recent severe weather events, leaving a stark reminder of the sector's vulnerability.
- **Rising inflation in costs such as fuel, fertiliser, financing, and feed due to high inflation are limiting the ability for farmers and their industries at large to transform.**

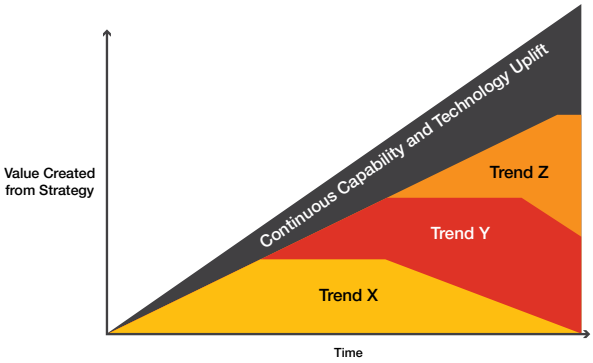
Leveraging New Zealand's natural comparative advantages will continue to prove to be a prosperous strategy. For example: water availability, highly-educated workforce, significant exclusive economic area, ability to grow crops year-round, and counter-seasonal positioning to consumer markets.

Moving from productivity to prosperity. It is about more than just dollars per head

New Zealand's Food and Fibre productivity gains will need to be increasingly cognisant of who is capturing the value within the economy. It is important to consider the well-being implications of these gains and for whom they matter. Is the productivity gain a quick-fix, faux gain or sustainable shift? How can an export-driven sector simultaneously prioritise the well-being of domestic consumers at home as well as global opportunities?

Consumer trends in health, sustainability, and convenience will continue to be important for the sector. However, the long-term frontier looks different with consumers likely having higher demands on radical transparency of their food, optimal land use, and decentralised food systems.

Aotearoa New Zealand is at a crossroads. They can continue to innovate at the margin to meet near-term trends or alternatively invest, regulate, and plan to ensure the building blocks for long-term sustained competitive advantage are in place to maintain a prosperous sector. The latter requires the sector to pivot and shift mindset. While focusing on short-term trends (X, Y, Z) can create short-term benefit, long-term sustainable value will be driven by prioritising continuous capability and technology uplift.

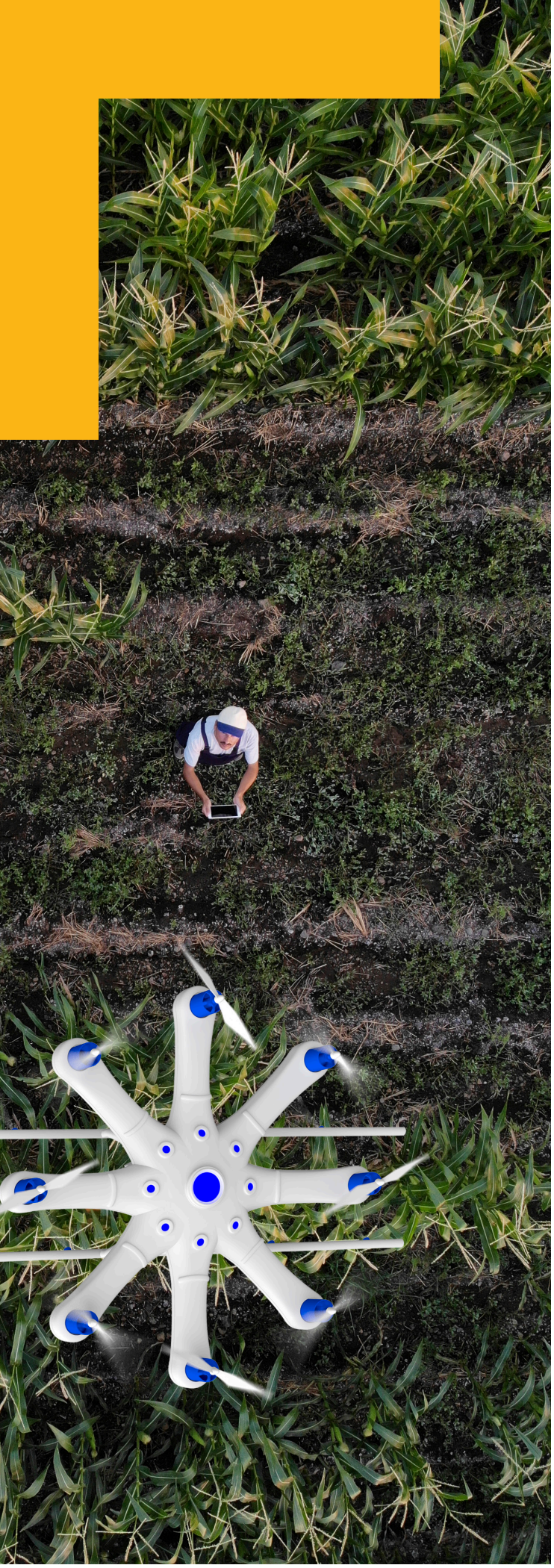


While quality products will always be in demand, Aotearoa New Zealand has the opportunity to strategically position its Food and Fibre sector to primarily offer high skills, knowledge, technology, and capability to countries with the existing resources for production. While we will continue to sell high quality products globally, the real value and contribution to GDP will come from exporting products and services designed and delivered by our highly-capable workforce and enhanced and defended through the application of technology.

This focuses more on contributing to exporting the systems, processes, and people of global players who can produce Food and Fibre at a scale, impossible for Aotearoa New Zealand alone.

Our premium products will demonstrate our abilities as skilled, sustainable producers. But, the real value we will bring comes from our knowledge and skill-based business models that can support other countries to produce products that meet their consumers' evolving demands and needs.

In this way, productivity can continue to increase beyond the constraints of our own natural resources. The increasing risks associated with consumer trends such as sustainability will be mitigated further by this approach as we help countries to build prosperous food systems.



What does this shift require?

The long-term competitive advantage of the sector will rely on a move to highly-skilled workers enabled by technology to deliver Food and Fibre, and Food and Fibre adjacent products and services. The potential in this shift is the ability to be world leaders in skills and knowledge in this sector – maintaining contribution to GDP and providing ongoing prosperity to Aotearoa New Zealand.

Our ability to do this lies in the capability of our people, systems, technology, and innovation. The world's constraints and problems are also now ours. How can we help tackle global problems with our skills?

The emerging themes and influences are clear:

- The workforce will continue its transition to a highly skilled, knowledge based one. Automating or augmenting low-skilled or repetitive tasks through incremental improvements and reducing the barriers to technology adoption.
- A range of disruptive technologies will continue to evolve that could change the types and forms of products that make up the food system.
- Radical transparency of land-use and supply-chains, including tackling the technology adoption challenge, will support continuous adaptation to consumer trends.
- Regulatory system change will need to be implemented in a targeted way that is risk-based and underpinned by science. This will have to be both effective and efficient to ensure prosperity for all – crucial in providing a foundation for long-term success.

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