Rethinking Beef: Evolving to a Market-Led, Sustainable and Scalable Beef Industry for New Zealand

By Dani Darke
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Executive Summary

New Zealand's beef industry generates approximately NZD $5 billion in annual export revenue, supplying over 80 countries from a pasture-based production system that is efficient, low-cost, and naturally aligned with growing global demand for sustainable protein. Yet the industry has not always captured the value its strengths deserve. This report argues that the path to greater profitability lies not in pushing more beef toward premium chilled markets, but in deliberately building on the structural advantages New Zealand already holds.

The central challenge is one of strategic misalignment. Domestically, grass-fed beef is widely regarded as premium. Internationally, premium is defined by eating quality — tenderness, flavour, and above all, consistency. Grain-fed systems deliver these attributes reliably. New Zealand's pasture-based system, subject to seasonal variation and a wide genetic pool, often cannot. The result is that New Zealand beef is valued for its provenance and nutritional credentials, but does not consistently command the highest price in the markets where we would like to win.

However, a significant opportunity for focus and growth lies elsewhere. Approximately 90% of New Zealand's beef exports to the United States (our largest market) are lean manufacturing beef: boneless, high-protein beef that blends with the fatty trim of grain-fed feedlot cattle to produce ground beef, the most consumed beef product in America. Rather than competing against grain-fed systems, New Zealand's pasture-based production complements them. Lean manufacturing beef is not a fallback — it is a structurally important ingredient in one of the world's largest food supply chains, and New Zealand is uniquely positioned to supply it.

Realising this opportunity requires deliberate segmentation. The highest-performing cattle — those capable of consistently meeting premium chilled specifications — should be directed into tightly controlled, market-led programmes. New Zealand has demonstrated this is achievable: Ocean Beef and Lumina Lamb show what is possible when genetics, feeding, processing, and marketing are aligned behind a defined consumer outcome. These programmes should be protected and strengthened. There is a risk in attempting to push the broader, more variable supply into premium categories it cannot reliably hold — a strategy that erodes potential and brand credibility. The remainder of production is better directed into a purpose-built lean manufacturing value chain, where New Zealand's competitive advantage is clear and genuine.

The engine of future growth is dairy-beef. Each year, approximately 1.8 million surplus dairy calves are processed at four days old — a resource that is hugely underutilised. With coordinated genetics, sexed beef semen, structured calf rearing, and efficient finishing systems, these animals can form the foundation of a scaled lean beef supply chain. A 2025 Rabobank analysis estimated that rearing an additional 600,000 of these calves could unlock over NZD $1.2 billion in value.

Efficient Beef Systems (a type of grazing system) has shown to double or triple production per hectare through structured rotational grazing, providing the farm-systems framework to absorb this supply. Virtual fencing removes the infrastructure barriers that have historically limited adoption on hill country.

Dairy-beef also carries a compelling environmental advantage. Because the emissions of the dam are attributed primarily to milk production, beef from dairy-origin cattle carry a methane emissions intensity up to 48% lower than traditional beef breeding systems. At a time when multinational food companies are publicly committing to reduce supply chain emissions, verified low-emissions lean beef from New Zealand holds a competitive advantage.

To capture this value, New Zealand lean beef must be repositioned from an anonymous commodity to a recognised, differentiated ingredient. A nationally governed "New Zealand Lean Beef" verification mark — independently audited and covering origin, animal welfare, traceability, and emissions intensity — would provide global customers with the assurance they need. Fonterra's repositioning of whole milk powder from commodity to preferred global ingredient offers a model for how this can be achieved through consistency, supply reliability, and customer alignment.

New Zealand's beef sector does not need to reinvent itself to unlock growth. It needs strategic clarity. By segmenting production deliberately, strengthening elite premium programmes, investing in dairy-beef integration, and positioning lean manufacturing beef as a specialised global ingredient, the industry can build a more profitable, sustainable, and resilient future — for farmers, processors, rural communities, and New Zealand Inc.

Table of Contents

Foreword

When I started my Nuffield year, I was driven by a clear intention: I wanted to produce something of practical use to the industry. Something that could genuinely make a difference to profitability in the sector, and in turn support the vibrancy of the rural communities that depend on that success.

My study started in quite a different place to where it finished. Initially, I was focused on agri-tech solutions for hill country farming, and how we could ensure New Zealand farmers had a seat at the table when those technologies were being designed. Our hill country is unique, and I felt strongly that if solutions were built without our involvement, they would never fully serve our farmers.

As my travels continued, I became excited by the potential of intensification, particularly through beef barns. Seeing those systems operating overseas challenged my thinking about what might be possible, and whether they could play a role in improving productivity and resilience.

But it was later, standing in overseas markets and seeing New Zealand beef in its end-market context, that my thinking shifted most significantly. Developing a deeper understanding of how our product complements United States production, and how it feeds into one of the largest and most sophisticated beef markets in the world, made me realise that our biggest opportunity may not lie solely in how we produce beef, but in how we position it. That realisation ultimately shaped the direction of this report.

Along the way, I was struck by how much opportunity exists within our beef sector. At home, the narrative often suggests beef is a mature or even stagnant industry, without a lot of momentum or discussion about growth. Yet from what I saw, there is genuine opportunity for New Zealand to strengthen its position and capture more value. My hope is that this report contributes to industry discussion and encourages further thinking about what could be possible, and ultimately leads to adoption on farm, with more profitable farm systems and outcomes for rural communities.

Undertaking this scholarship required stepping away from home for extended periods, and I could not have done it without the support of many people. Most importantly, my husband Anthony, who I left still feeding out to stock at the end of the 2025 autumn drought. I don't underestimate the slack that he had to pick up to enable my travels. I am also very grateful to his parents, Joanne and Stuart, who helped to help keep both the farm and the family running smoothly, and to our wider Mokauiti and King Country friends, who helped transport kids, filled gaps, and made sure our busy life continued. I am thankful for my daughters, who have supported me, and have been proud of me. I am grateful that I have been able to be a role model for them in this way.

One of the greatest privileges of this experience has been becoming part of the Nuffield network. Staying with Nuffield scholars and their families across the world, and experiencing their generosity and openness firsthand, was incredibly special. It reinforced for me, that rural people everywhere, share common challenges, opportunities, and values. I feel incredibly privileged to now be a lifelong member of that network.

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Objectives

As the ‘beef’ component of New Zealand’s sheep and beef sector becomes increasingly prominent, it is timely to take a strategic view of the industry to ensure it is positioned to deliver long-term profitability, sustainability, and value creation for farmers, processors, and New Zealand Inc.

The purpose of my research is to explore future value for the New Zealand beef industry - how we can redesign it to be more market led, closer to our consumer, and to deliver stronger profitability, and greater sustainability for everyone involved.

This study examines:

• The New Zealand Government’s ambition to double export value, and the role the beef sector may play in contributing to this objective;

• New Zealand’s current beef market positioning and the sources of value within existing production and supply chains;

• Opportunities to enhance value by improving alignment between market requirements and supply chain structure, through a focus on manufacturing beef;

• The contribution of dairy-beef in supporting future industry performance, with a low emissions profile;

• The potential for the increased use of efficient beef systems for efficiency and scalability, including the role of intensification and emerging technologies, while operating within environmental and animal welfare expectations.

Chapter 1: Introduction

The New Zealand Government has stated an ambition to double exports within a decade (by 2034).[1] This is an aspirational target, and one that begs the question from our industry – how does beef play its part?

The beef industry is a significant component of New Zealand's primary sector and a cornerstone of the export economy. Beef export receipts totalled approximately $5 billion NZD annually from the year to October 2025, contributing materially to the economy and supporting rural communities and regional towns across the country. [2]

New Zealand's beef production system is characterised by its reliance on a pasture-based diet, with animals raised primarily on grass rather than grain. This production model has historically provided a cost-efficient means of producing high-quality protein for export.

Approximately 90 percent of New Zealand's beef production is exported, with major markets including the United States, China, Japan, and other parts of Asia and North America.[3]

The sector operates within an increasingly complex domestic and international environment. Within New Zealand, environmental considerations such as sediment and nutrient losses from winter grazing of cattle have come under increased regulatory and public scrutiny. At the same time, the beef industry is facing growing international pressure regarding greenhouse gas emissions, particularly biogenic methane. Large multinational food companies, including McDonald's, have announced commitments to reduce emissions within their supply chains, increasing focus on how beef is produced and sourced.

Alongside these environmental pressures, the sector faces ongoing economic and structural challenges. Farm profitability, succession planning, labour availability, and land-use competition all influence the long-term sustainability of beef farming. Land-use change, including conversion to dairy and forestry, has altered the structure of the sheep and beef sector over time. These changes reflect the need for farming systems to remain economically competitive while operating within evolving environmental and regulatory limits.

While New Zealand's pasture-based systems remain relatively efficient compared with many international production systems, maintaining competitiveness will require continued evolution. This includes responding to market requirements, meeting environmental expectations, and ensuring that value is maximised throughout the supply chain.

There is a widely held perception within New Zealand that differentiation and premium positioning represent the optimal pathway for long-term industry success. This report examines these perceptions and considers how New Zealand's beef production system aligns with global market realities.

1.1 Government Growth Ambition

The New Zealand Government has set an ambitious target to double the value of primary sector exports by 2034. Achieving this objective will require both increased production and greater value capture from existing production.

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[1] *MBIE: Promoting Global Trade and Investment, 2024*
[2] *Stats NZ: Meat exports reach $10 billion in the year ended October 2025 (2026)*
[3] *Beef + Lamb New Zealand: Trade Policy*

For the beef sector, this represents both an opportunity and a challenge that merits deliberate attention. In the context of ongoing industry pressures, there is significant potential to revitalise hill country farming systems and enhance the long-term viability of rural communities.

Increasing export value can be achieved through a combination of production efficiency, value-added farming systems and processing methods, and improved market positioning.

It is important that New Zealand's beef industry continues to develop in a way that supports long-term economic, environmental, and social sustainability. This includes taking an aspirational view of its future, by examining how the sector may strengthen its contribution to export growth and position itself to capture value in an increasingly competitive global protein market.

1.2 New Zealand Beef Production and Market Positioning

New Zealand's beef production differs from that of many other major exporting countries due to its reliance on a pastoral system. In contrast, countries such as the United States and Australia utilise grain finishing systems for a significant proportion of their production, particularly for beef destined for premium chilled beef markets.

Grass-fed beef represents a relatively small segment of global beef production. It is often differentiated in international markets based on its environmental credentials, and nutritional aspects, and positioned as a premium product. At the same time, grain-fed beef is widely available and is recognised for its consistent eating quality attributes, including marbling and tenderness.

New Zealand processors and exporters have developed branded programmes to differentiate their products and look to position them within higher-value market segments. These programmes often incorporate specific production requirements and supply arrangements to support market positioning.

Beef is typically exported through a supply chain involving processors, exporters, importers, and distributors before reaching the end consumer. Understanding how New Zealand beef is positioned within these global supply chains is important when considering challenges and future opportunities for the sector.

1.3 Manufacturing Beef

Manufacturing beef forms a significant, high value component of New Zealand's beef exports. This category includes lean boneless beef derived from cows, bulls, and cuts from prime animals that do not meet premium chilled beef specifications.

New Zealand's lean manufacturing beef plays an important role in global beef supply chains. It is commonly used to blend with higher-fat beef from grain-fed systems, enabling processors to achieve consistent fat specifications in finished products and maximise the value of fatty trimmings from feedlot cattle. Manufacturing beef is widely used in processed products such as mince, burgers, and smallgoods such as salami.

Manufacturing beef is comparatively efficient to process. Unlike premium table-beef programmes, which often require extended chilling, ageing, and careful handling to protect product quality and brand integrity, manufacturing beef can typically be processed more directly through the plant. Much of the product is hot boned and packed according to defined chemically lean (CL) specifications, reducing the need for ageing space and extended storage.

Sales are generally driven by the ability to meet precise fat and lean specifications required by customers, rather than by branded programmes or product storytelling. This creates a streamlined processing and marketing pathway, focused on consistency and functional performance within further-processed products.

The inherent attributes of manufacturing beef—particularly its consistency, processing efficiency, and functional role in global supply chains—have underpinned strong and sustained demand, and has contributed significantly to the uplift in all-beef cattle returns.

1.4 The Role of Dairy-Beef in New Zealand's Beef Supply

The dairy sector plays an important role in New Zealand's beef supply, with a significant proportion of cattle processed for beef originating from the national dairy herd. Each year, large numbers of calves are born within the dairy industry, reflecting the scale of milk production.

The integration between the dairy and beef sectors has developed in response to the availability of calves from the dairy industry. Sheep and beef farmers have grown and finished dairy-origin animals, which over time has reduced the reliance on a dedicated national beef-cow breeding herd. The performance of dairy-beef cattle is influenced by a range of factors, including genetics, feeding systems, and management practices.

Despite this integration, a significant number of calves remain surplus to current production systems. Annually approximately 1.8 million calves[4] are slaughtered at around a week old. This has implications for the industry's social licence to operate, while also highlighting the scale of biological potential that exist within the wider production system.

Understanding the potential of dairy-beef systems is therefore relevant when assessing opportunities to improve production efficiency, resource utilisation, and overall sector performance.

1.5 The Potential for Intensification

New Zealand's beef production has traditionally been based on extensive pastoral systems, particularly in hill country environments. These systems rely on natural pasture growth and seasonal grazing patterns and have been shaped by land capability, climate, and the availability of infrastructure.

As these systems have evolved, there has been increasing focus on the factors that influence productivity and profitability, including subdivision, soil fertility, and water availability. Farming systems that incorporate rotational grazing and higher stocking densities have become more common, reflecting efforts to improve pasture utilisation while continuing to operate within environmental limits.

In considering the potential to increase the value of beef exports, production volume represents one possible lever. This raises the question of whether beef production can be further intensified within New Zealand's pastoral framework. 'Efficient Beef Systems' — a term coined

[4] *Hunt, Joshua: Viability of dairy-origin calves for a new beef production enterprise in New Zealand*

by AgFirst consultant Bob Thomson — have demonstrated the ability to significantly increase carrying capacity and profitability on farm, with a focus on improving per-hectare performance and overall efficiency.

Technological developments such as virtual fencing are also influencing how grazing systems can be managed. Virtual fencing allows livestock to be controlled without the need for permanent physical infrastructure, creating opportunities for more intensive grazing management in areas where subdivision would otherwise be difficult or uneconomic. It also enables livestock to be excluded from sensitive areas and waterways.

Together, these developments highlight the potential for changes in system design and technology to influence how hill country beef production is managed, and provides context for considering how production efficiency and scale may evolve in the future.

1.6 Purpose, Scope and Methodology

The purpose of this research is to examine New Zealand's beef industry and explore how production systems, value chains, and market positioning could evolve to improve outcomes for rural communities and New Zealand Inc.

As part of this Nuffield Scholarship, international travel was undertaken to study beef production systems in a range of global contexts.

In the United States, visits were conducted with Colorado State University and the University of Nebraska–Lincoln, alongside visits to feedlots ranging from small family operations to those exceeding 100,000 head. Processing facilities, including a JBS plant handling up to 6,000 cattle per day, were also visited to observe grading systems, carcass utilisation, and processing efficiency.

In Europe, a range of housed livestock systems were examined, including dairy, hog and broiler, providing insight into intensive production systems operating within different regulatory and environmental frameworks. Belgium Blue and veal operations were visited to understand European beef production.

In Japan, Wagyu production systems were visited to understand how high-value beef is created through consistent genetics, feeding precision, and management practices.

New Zealand beef importers and distributors were visited to understand New Zealand market perception and positioning across supermarkets, restaurants, and high-end retailers.

Across all regions, models and practices were sought out that could inform New Zealand's approach - balancing efficiency with environmental integrity, animal welfare, and market differentiation based on grass-fed attributes.

The findings from these visits, alongside interviews with farmers, researchers, processors, and industry participants both in New Zealand and internationally, underpin the analysis presented in the sections that follow.

Together, they provide a basis for rethinking how New Zealand can build a more cohesive, market-led, and profitable beef sector for the future.

Chapter 2: A Global Beef Overview

2.1 Global Beef Production

Global beef production occurs across a wide range of systems, broadly characterised by differences in feeding methods, scale, and level of intensification. The largest producing regions include the United States, Brazil, China, and the European Union, which together account for a significant share of global output.

In North and South America, production is dominated by large-scale commercial systems. These typically involve pasture-based cow–calf operations, with animals later finished in feedlots on corn and grain-based diets to achieve rapid growth and consistent carcass characteristics. This type of feeding system allows the supply chain to deliver a predictable eating experience to the consumer.

Brazil has one of the world's largest cattle herds and is the leading exporter of beef, supplying global markets with both commodity and premium products. In contrast, Japan operates a much smaller cattle herd, with production typically carried out by family-owned businesses. Despite its smaller scale, Japan has created significant value through Wagyu production—a highly prized product renowned for its exceptional marbling and eating quality. However, this system is also extremely costly, and producer profitability is often more constrained than commonly perceived.

Global meat production has expanded significantly, more than tripling over the past 50 years, highlighting the growing importance of livestock products in global food systems.

2.2 Global Beef Consumption

Beef consumption trends reflect broader economic and demographic shifts. Overall consumption is projected to continue growing, driven largely by population growth and rising incomes, particularly in developing regions. Beef consumption is forecast to increase by around 13% over the next decade, although per-capita consumption globally is expected to remain relatively stable at approximately 6 kg per person per year.[5]

Consumer preferences for beef are influenced by a combination of eating quality, price, nutrition, and production attributes. Among these, eating quality remains the most important driver of repeat purchase and overall satisfaction.[6] Key characteristics include tenderness, flavour, and juiciness. These attributes are closely associated with intramuscular fat, or marbling, which contributes to both flavour and texture.[7]

Globally, grain-fed production systems dominate commercial beef supply, particularly in major producing and consuming regions such as North America and parts of Asia. These systems produce beef with higher and more consistent levels of marbling, enabling a reliable eating experience. As a result, grain-fed beef is widely used in premium foodservice and retail channels and represents the product that many consumers are most familiar with and have come to expect in terms of eating quality.

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[5] *Organisation for Economic Co-operation and Development (OECD) and the UN Food and Agriculture Organisation (FAO), Agricultural Outlook 2025-2034*

[6] *Thompson, J.M., 2002. Managing Meat Tenderness. Meat Science Journal.*

[7] *Meat Standards Australia*

Consistency is another important factor. Consumers generally expect the beef they purchase to deliver a reliable eating experience, and variability can reduce consumer confidence and willingness to repurchase. This has led to the development of national grading systems and branded programmes in many countries, designed to deliver more predictable quality outcomes.

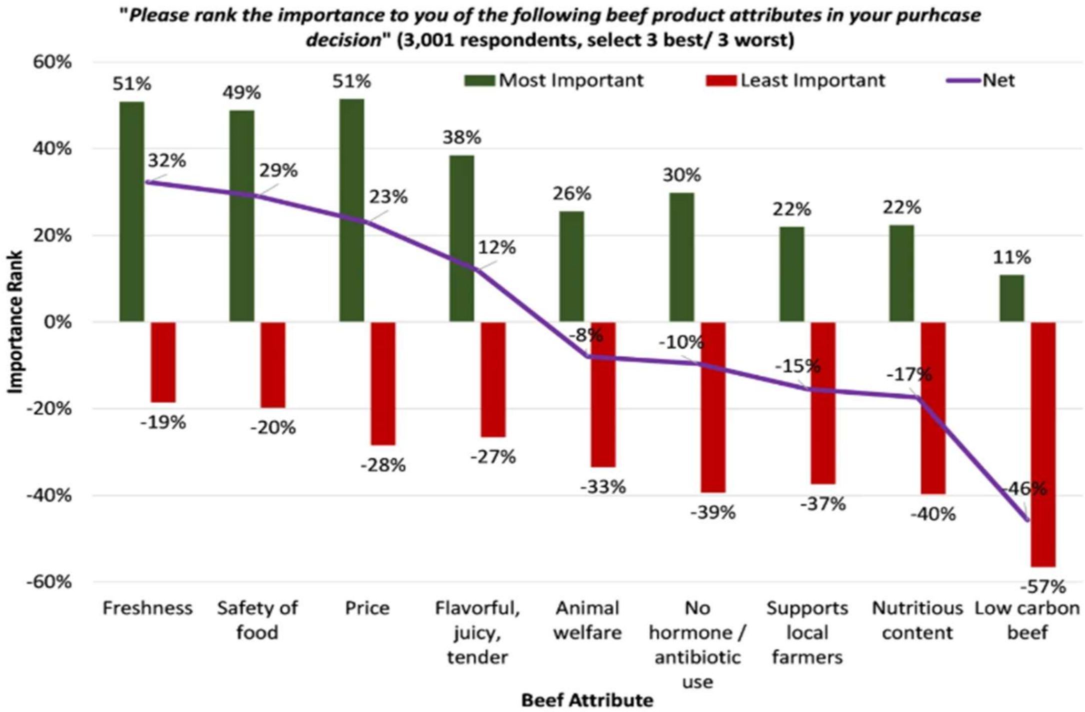

Figure 1: Kansas State University, 2024: Ranking beef attributes. USA consumers surveyed.

Appearance at the point of purchase also influences decision-making. Bright red colour, fine muscle texture, and appropriate fat cover are commonly associated with freshness and quality, while excessive external fat or dark colouring can reduce appeal.[8]

Price remains an important consideration, particularly in retail settings. Beef is often one of the more expensive protein options, and consumers may substitute it with alternative proteins such as chicken or pork when prices rise. However, some consumers are willing to pay a premium for beef that meets specific quality or production criteria, particularly when it is associated with trusted brands or production systems.[9]

As a unique production system, grass-finished beef is often associated with natural production, high animal welfare and environmental credentials, as well as having nutritional benefits to the consumer. Health claims have reported that grass-fed beef showed 62% lower fat content, 65% lower saturated fat, and greater concentrations of omega-3 fatty acids and conjugated linoleic acid (CLA) compared to grain-fed beef.[10]

[8] *MLA 2022, Factors Affecting Eating Quality*

[9] *MLA 2025. Global Consumers and Sustainability*

[10] *Ziehl A, Thilmany DD, Umberger WJ. A cluster analysis of natural beef product consumers by shopping behaviour, importance of production attributes, and demographics*

An interesting dynamic in the United States, is the consumption of ground-beef. Up to 60% of all beef consumed in the USA is in the form of ground-beef, however their domestic production systems are set up to provide vast quantities of high-quality premium table-beef. This has led to discussions of how they produce a lower quality animal to reach this ground-beef market[11]. In reality this need for ground beef is filled by the likes of New Zealand, Australia and Brazil.

Overall, consumer preferences for beef reflect a balance between price, eating quality, trust, nutrition, and ethical considerations. These preferences influence how beef is produced, processed, and marketed across global supply chains.

Chapter 3: A New Zealand Beef Industry Overview

3.1 From the Farm to the Processor

The beef industry in New Zealand is predominantly a pasture-based system, leveraging the country's temperate climate, fertile soils, and favourable topography. Production occurs across a wide range of landscapes, from intensive finishing units on flatter land to extensive hill country farms.

The source of beef genetics comes from two distinct breeding populations: the traditional beef cow herd and the New Zealand dairy herd. This dual origin is a defining feature of New Zealand's beef industry and plays a significant role in shaping both production systems and end-market outcomes. As at March 2026, New Zealand had approximately 3.7million beef cattle and 5.8million dairy cattle.[12]

The traditional beef cow herd consists of a wide genetic diversity, including British breeds such as Angus and Hereford, as well as European breeds such as Charolais and Simmental. These cattle are typically bred and finished for the prime chilled-beef market. Most male calves are castrated to encourage carcass characteristics associated with eating quality, including marbling and fat cover.

These animals are processed as 'prime beef', destined for table cuts such as ribeye, sirloin, and porterhouse steaks for restaurants and retail markets. However, only a portion of the carcass is suitable for these premium applications. A substantial proportion of each carcass ultimately enters the manufacturing beef stream, where it is used in processed products such as ground-beef and burgers.

As the dairy herd has expanded over recent decades, so too has the bull-beef sector. Farming Friesian bulls has become a common and profitable farming policy in many parts of the country.

Entire bulls convert pasture efficiently into lean muscle, producing a highly sought-after manufacturing product known as 95cl (95% chemically lean). This lean beef is exported, particularly to the United States, where it is blended with fatty trimmings from grain-fed cattle to produce ground beef — the foundation of the global hamburger market.

Farmax modelling and individual farm performance data have consistently shown that bull-beef systems deliver strong economic returns, driven by higher stocking rates and efficient feed conversion.

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[11] Rutherford, B. BEEF Magazine: Has the USA Become a Ground Beef Nation?
[12] Beef + Lamb New Zealand, Economic Service 2026

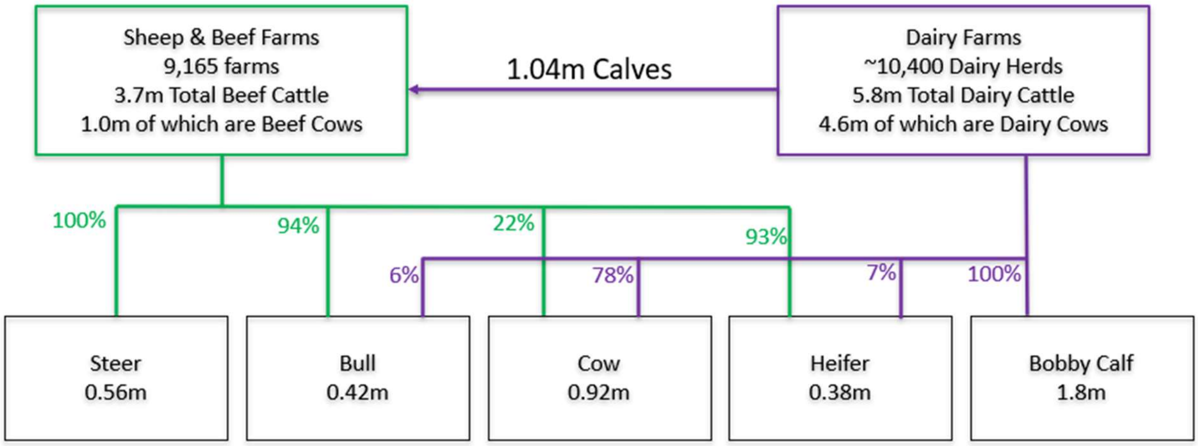

Figure 2: Beef value chain domestic supply lines for slaughter of cattle and calves from dairy and beef farms (Beef + Lamb New Zealand, Economic Service, as at March 2026).

Many beef cow herds themselves originate from dairy-beef crosses, such as Angus-Friesian and Hereford-Friesian cows. These animals are valued for their hybrid vigour and maternal performance, particularly when crossed with terminal sires such as Charolais or Simmental to produce finishing progeny. This system removes the need to breed replacement females on-farm, with replacement heifers purchased from dairy farms as calves.

Despite the integration that has been achieved to date, a significant number of calves remain surplus to current dairy and beef system requirements. Approximately 1.7 – 1.8 million dairy calves are processed each year at around four days old.

This represents both a structural feature of the New Zealand dairy system and an area of increasing public interest. Industry organisations such as DairyNZ and Fonterra have identified this as an area of focus, with current efforts aimed at improving the genetic suitability of dairy-beef calves through sire selection. The objective is to produce calves that meet the performance and carcass characteristics required by the beef industry.

3.2 Processing and Industry Structure

New Zealand's beef processing is carried out by several major companies, including Silver Fern Farms, Alliance Group, ANZCO Foods, AFFCO and Greenlea Meats along with a number of smaller operators.

These companies slaughter, process, and export beef to international markets, operating within a competitive procurement environment to secure livestock supply. Processing plants rely on throughput to lower overheads, with livestock supply patterns influencing plant utilisation and operational performance.

A current dynamic in the industry is over-capacity which is causing levels of procurement competition that is unsustainable for the industry long-term.

3.3 From the Processor to the World

New Zealand produces approximately 500,00-550,000 tonnes of beef annually, with around 90% of that exported.[13] This highlights the relatively small domestic market and the industry's strong reliance on global trade.

In 2024/25, New Zealand exported approximately 450,000 tonnes of beef, generating around $4.9 billion in export revenue and supplying approximately 80 countries. New Zealand ranks 5th in beef exporting countries on volume.[14]

Figure 3: Major beef exporting nations by volume. MLA 2020

New Zealand's beef sector supplies a range of market segments, broadly divided between premium chilled beef and lean manufacturing beef.

Premium beef programmes focus on delivering products into differentiated market channels, often emphasising attributes such as grass-fed production, provenance, and sustainability. Most processors operate branded beef programmes, which serve both as a market positioning tool and as a mechanism to procure livestock from farmers.

The United States and China have traditionally been New Zealand's largest export markets, although this balance has shifted over time. Demand from China has softened in recent years due to economic conditions and global supply changes, while markets such as the United States, Canada, Japan, and Southeast Asia have strengthened.

In the 2024/25 export year to July, shipments to the US accounted for 41% of total export volume and 46% of total export value. Currently, more than 90% of beef exported to the US is lean boneless manufacturing beef.

Lean manufacturing beef is exported primarily as an ingredient, rather than as a branded retail product, and forms a key part of the global ground beef supply chain. Driven by Americans' love of hamburgers, ground-beef accounts for more than half of total U.S. beef consumption.[15]

New Zealand's pasture-based production system and integration with the dairy sector place it in a unique position to supply this type of product at scale.

[13] *Meat Industry Association. New Zealand Red Meat Export Statistics, 2024.*
[14] *MLA, Major Beef Exporting Nations, 2020.*
[15] *Beef + Lamb New Zealand, MIA. Report: New Zealand beef imports add value to the United States' beef market and its cattle producers.*

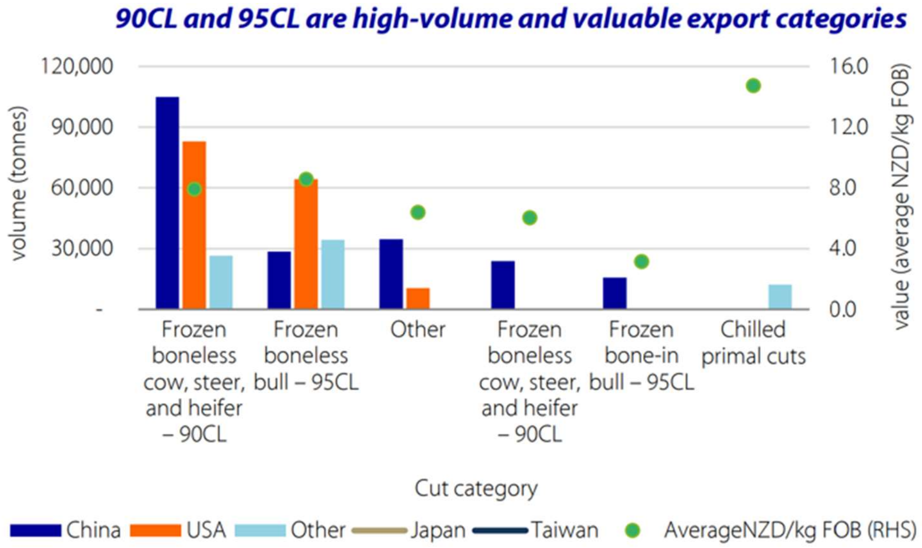

Figure 4: Source Statistics NZ, Rabobank 2023

Chapter 4: The New Zealand Beef Paradox: what does premium really mean?

4.1 Domestic Perception Versus Global Market Reality

New Zealand's beef industry occupies a unique, and at times conflicting position in global markets.

Domestically, grass-fed beef is widely regarded as a premium product: ethically produced, environmentally responsible, and naturally superior to grain-fed alternatives. This perception is reinforced through industry narratives, marketing campaigns, and a strong sense of national pride in New Zealand's pastoral farming systems. Grass-fed production aligns strongly with values around natural farming, animal welfare, and environmental stewardship, and is often assumed to provide an inherent competitive advantage internationally.

Offshore, however, the market reality is more complex. Grass-fed beef exists as a distinct category, but it does not automatically occupy the premium position. In some markets it may achieve this status, but often New Zealand beef is discounted relative to grain-fed Australian, US, or locally produced alternatives. In many key export markets — particularly North America, Europe, and parts of Asia — consumer preferences are driven primarily by eating quality, with tenderness, flavour, and consistency the most important determinants of satisfaction and repeat purchase.

Grain-fed beef sets a high benchmark in this regard and represents the product that many global consumers are most familiar with. Controlled feeding regimes, uniform genetics, and tightly coordinated supply chains allow grain-fed systems to deliver reliable marbling and a predictable eating experience. This consistency underpins its dominance in premium retail and foodservice channels. By contrast, grass-fed beef is sometimes perceived as delivering a less predictable eating experience, with variability in tenderness and juiciness influencing consumer confidence.

At the highest end of global markets, premium positioning is often defined not only by eating attributes but also by genetics and brand. A leading example is the United States' Certified Angus Beef programme, which combines breed selection, feeding systems, and strict specification standards to deliver a consistent, branded product with strong consumer recognition. These programmes focus on delivering eating quality first, with production method forming part of a broader value proposition.

This contrast highlights a fundamental paradox for New Zealand's beef sector. While grass-fed production delivers a natural way of growing animals and system-level advantages, these attributes do not always translate into price premiums or preferred market positioning. Instead, New Zealand's grass-fed beef is frequently positioned as a differentiated or niche product rather than the default premium offering.

At the centre of this paradox is a misalignment between how value is created on farm and how it is recognised by the end customer. New Zealand's pastoral system is highly efficient at converting grass into protein and aligns with many of the production attributes valued in modern food systems. However, the industry has largely optimised around biological and operational efficiency, rather than focusing on delivering a consistent and uniform eating experience required to secure premium positioning.

As a result, the sector finds itself in a position where it produces beef that is highly regarded domestically and valued for its production credentials internationally, yet does not always achieve the highest commercial returns in global markets. This raises an important question for the industry: what does "premium" truly mean in the context of modern global beef consumption, and how well does New Zealand's production system align with that definition?

Meat cabinet in Singapore, showing NZ beef at a significant discount to Australian grain-fed and grass-fed beef.

4.2 Case Study: Certified Angus Beef

Aligning Genetics, Feeding, Specifications, and Brand to Deliver Premium Value

The Certified Angus Beef® (CAB) programme is widely regarded as one of the most successful branded beef initiatives globally. Established in 1978 by the American Angus Association, the programme was developed to create a consistent, high-quality product that could differentiate Angus-influenced cattle and deliver greater value throughout the supply chain.

Throughout the 1960s-70s a nutritional focus was trying to eliminate fat from the American diet to combat increasing levels of obesity. In the effort to take fat out of beef, eating quality suffered dramatically, to a point where one in four steaks in the US was tough, in the eyes of consumers.[16]

In response Angus breeders sought a way to ensure cattle with superior carcass characteristics were recognised and rewarded. Working with meat scientists at Ohio State University, the programme introduced a set of objective carcass specifications that beef had to meet to carry the Certified Angus Beef brand. Certification was conducted by independent USDA graders, ensuring credibility and maintaining consumer trust.

Carcasses must meet ten specific science-based criteria relating to marbling, maturity, size, and uniformity. Key requirements include a minimum marbling score of 'modest', cattle are 30 months of age, carcass weights below 500kg, fat thickness of 2.5cm or less, minimum rib-eye area of 25 to 40cm², and the absence of defects such as dark cutting beef. These standards are deliberately selective, with only around 30–40% of Angus-influenced cattle meeting the full specification.[17]

The focus on marbling is central to the programme's success. Marbling is a primary determinant of tenderness, flavour, and juiciness, and CAB specifications ensure only carcasses capable of delivering a consistent eating experience qualify for the brand. This consistency has enabled CAB to establish strong relationships with premium retail and foodservice customers.

Since its launch, the programme has achieved substantial commercial success. More than 7million tonnes of Certified Angus Beef have been sold, generating over US $700 million in premiums for participating cattle producers. Annual sales now exceed 545,000 tonnes (roughly equivalent to New Zealand's total beef exports), reflecting strong consumer demand and widespread adoption across retail and foodservice channels globally.

Several factors underpin the programme's success. First, the alignment of genetics with market specifications has driven widespread adoption of Angus genetics across the US herd, improving carcass quality at a national scale. Grain-feeding ensures the genetic potential of these animals is reached at a young age, with maturity a factor negativity influencing quality.

Second, the use of objective, independently verified carcass specifications has ensured brand integrity and consumer confidence.

Third, CAB invested heavily in brand development and marketing, building strong recognition and demand among consumers and foodservice operators.

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[16] *Condon, Jon. World's largest beef brand program CAB a '47-year overnight success'*

[17] *USDA, Certified Angus Beef G-1 Specification Requirements*

Finally, the programme provided clear price signals to producers, rewarding cattle that met specifications and encouraging supply chain coordination.

The Certified Angus Beef programme demonstrates how aligning genetics, production systems, processing specifications, and brand can deliver consistent eating quality and sustained premiums. Its success has shaped the US beef industry, illustrating the commercial value of designing production systems to meet defined market outcomes.

4.3 Variability as a Structural Constraint

One of the most significant barriers to premium positioning for New Zealand's grass-fed beef is the inherent variability in the production system and therefore the end product. Seasonal pasture growth, fluctuating feed quality, a wide range of genetics, and climatic volatility all contribute to inconsistency in animal performance and meat quality.

Unlike grain-fed systems — where diet, growth rates, and finishing weights can be tightly controlled — grass-fed production is exposed to natural variation that is difficult, if not impossible, to fully manage. While New Zealand's system excels at converting grass into protein efficiently, it does so at the cost of uniformity. From a consumer perspective, inconsistency undermines trust, and as trust declines, price resistance increases.

4.4 Economic Signals and Production Choices

At its core, the New Zealand beef paradox reflects a production system optimised primarily for biological efficiency rather than for delivering a consistent consumer experience. Farm systems have evolved to manage climatic variability, maximise pasture utilisation, and remain financially resilient in a volatile environment. These are rational and necessary priorities within a pasture-based system. However, they do not always align with the requirements of premium beef markets, which place a high value on consistency, specification compliance, and predictable eating quality.

Traditional beef cow breeding and finishing systems illustrate this tension. Significant investment is often required in premium sires to produce progeny capable of meeting high-value market specifications. These genetics are selected to improve carcass traits such as marbling and fat cover, which are necessary to access premium programmes. However, these systems typically operate at lower stocking rates than bull-beef systems, as steers and heifers grow more slowly, reducing overall feed conversion efficiency per hectare. This creates an opportunity cost, as fewer kilograms of beef are produced from the same land area.

The natural variability of pasture supply further compounds this challenge. During winter or periods of feed deficit, farmers may struggle to maintain consistent growth rates in youngstock. Production decisions are often made to manage feed supply and stocking pressure rather than to optimise carcass quality. At certain times of the year, cattle may not be fully fed in order to maintain overall farm efficiency. At other times, animals may be processed earlier than ideal to free up feed for the next class of stock or to respond to procurement signals from processors needing to maintain throughput.

As a result, animals that have been bred and managed with the intention of achieving premium outcomes may fall short of desired specifications. Despite the higher investment in genetics and longer finishing periods, these animals may ultimately be sold into lower-value channels. Variability in feed supply and animal performance can therefore erode value throughout the production chain, highlighting the sensitivity of pasture-based systems to biological and environmental factors.

This dynamic creates a structural tension across the value chain. Farmers are incentivised to maximise returns from grass and maintain whole-farm efficiency, while processors and marketers are seeking animals that consistently meet premium market specifications. In a competitive procurement environment, processors needing to maintain plant utilisation are often required to accept animals across a wide range of quality levels, including those that fall into the middle ground between commodity and premium.

When these incentives are misaligned, the system defaults to what it does best: producing efficient volumes of beef rather than consistently delivering premium eating experiences. New Zealand's pastoral production model has been highly successful in supplying global markets with lean, pasture-raised beef, particularly within manufacturing and commodity segments. The challenge arises when the same system is expected to deliver premium outcomes without structural alignment between production, processing, and market requirements.

In global beef markets, premium is not defined solely by how an animal is raised, but by the eating experience delivered to the consumer. Without addressing the sources of variability inherent in pasture-based systems and aligning incentives across the value chain, the ability to consistently capture premium value remains constrained.

4.5 Examples of Premium Red Meat Value Chains in New Zealand

There are, however, examples within New Zealand that demonstrate premium positioning is achievable when systems are purpose-built.

Ocean Beef, developed by ANZCO Foods, is an example of a successful premium value chain. This value chain is built exclusively on Angus genetics, pasture-raised to around 400 kg before being grain-finished for approximately 150 days at the Five Star Feedlot in Ashburton. The result is a consistently high-quality eating experience that commands strong returns in premium Asian markets.

Silver Fern Farms (SFF) Eating Quality (EQ) programme is another programme designed to secure beef suitable for high-value chilled export markets. The programme uses a combination of carcass measurements and grading technologies to assess eating quality through levels of marbling, fat cover, pH, age, and ossification.

The programme provides feedback to farmers, and premiums dependant on meeting targets, helping align genetics and farm management systerms with market requirements.

4.5.1 Case Study: Lumina Lamb

Lumina Lamb is a premium lamb programme developed as a joint venture between Headwaters New Zealand and Alliance Group, with support from MPI as part of the Primary Growth Partnership (PGP). Headwaters provides the genetic foundation and coordinates on-farm production, while Alliance Group is responsible for processing, marketing, and exporting the product. The programme originated from the Headwaters breeding initiative, which began in 2006 with the objective of developing sheep genetics with improved eating quality and nutritional characteristics, including higher intramuscular fat and increased levels of polyunsaturated fatty acids.

The Lumina programme is based on the use of Headwaters genetics, and combines with defined finishing and processing protocols designed to deliver consistent outcomes. Lambs in the programme are ewe lambs and castrated males, and must be finished for a minimum of

35 days on a specialised forage mix consisting of chicory and red clover, known as the Lumina finishing system. This finishing period supports the development of intramuscular fat and contributes to achieving the required carcass specifications.

Following processing by Alliance Group, Lumina lamb is aged for a minimum of 21 days to further improve tenderness and eating quality. The product is then marketed into premium export markets, primarily through high-end foodservice and retail channels.

A key feature of the Lumina model is the integration of genetics, feeding, processing, and marketing into a single coordinated value chain.

Financial incentives are used to support participation. Lumina has reported premiums to farmers of approximately $24 per lamb above standard schedule prices for animals meeting specifications.

These examples show that New Zealand red meat can occupy a premium position when the entire system is aligned behind it. The challenge for beef is how to lift the very best of New Zealand's prime cattle into similar value chains by focusing on the fundamentals behind the product: eating quality attributes through genetics, and feeding regimes to express this potential.

4.6 The Value Disciplines Framework and its Application to New Zealand Beef

A useful mental model for understanding how organisations position themselves for success is the Value Disciplines framework, developed by Michael Treacy and Fred Wiersema in their Harvard Business Review article: Customer Intimacy and Other Value Disciplines (1993).[18] Their research found that highly successful companies tend to excel in one of three distinct disciplines: operational excellence, product leadership, or customer intimacy. While all organisations must perform adequately across each area, sustained success typically comes from deliberately choosing one discipline to lead in, rather than attempting to sit in the middle of all three.

Operational excellence focuses on delivering reliable products at the lowest cost and with maximum efficiency. These organisations prioritise standardisation, process efficiency, and scale. The value proposition to customers is consistency, availability, and competitive pricing. New Zaland examples include Pak 'n Save and the Warehouse.

Product leadership centres on innovation and product performance. Organisations in this discipline focus on developing superior products with distinctive features or technical advantages. Success depends on continuous improvement, research and development, and the ability to deliver products that outperform alternatives. New Zealand examples are Rocket Lab and Halter.

Customer intimacy emphasises deep alignment with specific customer needs. These organisations focus on delivering tailored products that meet clearly defined market requirements. This discipline requires close supply chain coordination, strong customer relationships, and the ability to consistently deliver products that meet precise specifications. Examples include Lumina Lamb and Starbucks.

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[18] *Treacy, M, Wiersema, F. Customer Intimacy and Other Value Disciplines. Harvard Business Review January/February 1993*

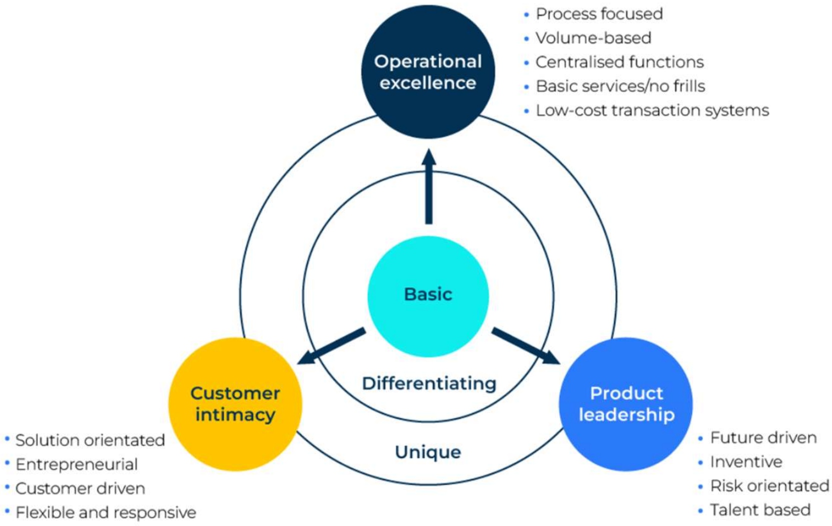

Figure 5. Treacy, M, Wiersema, F. Customer Intimacy and Other Value Disciplines. Harvard Business Review.

A key insight from the framework is that organisations that attempt to operate equally across all three disciplines often struggle to achieve clear market differentiation. Instead, they risk becoming "stuck in the middle," without the cost advantage of operational excellence, the innovation advantage of product leadership, or the targeted value proposition of customer intimacy.

This framework provides a useful lens through which to examine New Zealand beef production systems. Much of New Zealand's traditional cow breeding and finishing system sits between operational excellence and customer intimacy. These systems are designed to efficiently convert pasture into beef while also attempting to produce animals suitable for premium table-beef markets. However, natural variability in pasture supply and carcass outcomes can make it difficult to consistently meet premium specifications, while also limiting the ability to achieve the scale and efficiency advantages of fully optimised production systems.

In contrast, bull-beef systems supplying manufacturing beef align clearly with the operational excellence discipline. These systems focus on maximising biological efficiency, producing volumes of lean beef at competitive cost. Success is measured in kilograms of beef produced per hectare, rather than in achieving specific eating quality outcomes.

At the other end of the spectrum, programmes such as Lumina Lamb align strongly with customer intimacy. These systems are designed around defined market requirements, with genetics, feeding regimes, processing, and marketing coordinated to deliver a consistent eating experience. Premium returns are achieved by meeting precise customer specifications rather than by maximising production efficiency alone, and relationships with chefs are a cornerstone of the relationship business.

This mental model highlights the importance of strategic clarity. It illustrates how production systems positioned clearly within a single discipline may achieve stronger market outcomes than those attempting to operate across multiple disciplines simultaneously.

4.7 Reframing the Challenge

Diagnosing the challenge requires acknowledging the gap between domestic perception and international reality, recognising the constraints imposed by biological variability, and confronting the misalignment between farm-level incentives and consumer outcomes.

Until these issues are addressed, New Zealand will continue to sit uncomfortably between commodity and premium markets — excellent at producing beef from grass, but less able to secure the premium positioning that brings real value back through the supply chain.

The reality is that not all beef can, or should, be elevated to a premium position. There is a real risk that by pushing mediocre product into the premium category, the grass-fed story itself is undermined.

At the same time, the strength and profitability of manufacturing beef presents a compelling alternative argument. Beyond the very best premium beef New Zealand can offer, there is an opportunity to refocus the remainder into a purpose-built manufacturing value chain — one that recognises where New Zealand's competitive advantage truly lies and captures value accordingly.

Chapter 5: Elevating Manufacturing Beef to a Specialty Functional Ingredient

Rethinking New Zealand's beef opportunity requires a clear assessment of where the country holds structural advantage.

While previous chapters have examined the challenges associated with positioning grass-fed beef as a premium table product, this chapter outlines the case for a more deliberate segmentation strategy: reserving the very best cattle for tightly specified premium programmes, and designing the remainder of the system around differentiated manufacturing beef.

Manufacturing beef has traditionally been viewed as a lower-value output relative to table cuts. However, within global protein markets it performs a critical functional role.

It underpins large-scale quick service restaurant (QSR) chains, retail mince programmes, blended protein products, and high-end smallgoods that demand consistency, scale, and precise fat specifications. When assessed within this broader context, manufacturing beef represents not a residual market, but a strategically important one.

5.1 The Importance of Manufacturing Beef in the Global Value Chain

The global ground-beef and processed beef markets operate on highly standardised specifications. Products are formulated to defined chemically lean (CL) percentages to ensure consistent fat content, cooking performance, and eating experience. This specification-based system creates a clear and objective framework for trade, in contrast to chilled-beef markets, where value is more closely linked to subjective eating quality traits such as tenderness and flavour.

Within this system, the United States operates the world's largest grain-fed beef industry.[19] Feedlot cattle are typically processed at heavy carcass weights exceeding 420 kg, producing highly marbled primals for steaks and premium cuts. However, these same carcasses also generate substantial volumes of fatty trim. This trim cannot be used alone in ground beef products, which commonly require lean content of around 75CL to meet retail and foodservice specifications. To achieve this balance, processors must blend fatty trim with lean beef.

New Zealand's grass-fed manufacturing beef plays an important role in this process. Produced predominantly from pasture-fed bulls and cows, New Zealand beef is naturally lean, sitting at 90–95CL. This makes it well suited for blending with US grain-fed trim, allowing processors to achieve required specifications. Rather than competing with US grain-fed beef, New Zealand lean beef complements it, enabling the efficient utilisation of the entire US carcass.

The importance of this role is reflected in the scale and consistency of trade. The United States is by far New Zealand's largest single beef export market, with 90% of product shipped as lean beef destined for grinding. This trade supports both industries simultaneously: it provides US processors with the lean raw material required to meet domestic demand for ground-beef, while providing New Zealand with access to a large, specification-driven market.

Manufacturing beef also plays a central role within New Zealand's own value chain. It enables full utilisation of domestically produced carcasses and represents a significant share of total export volume and revenue (Meat Industry Association, 2024). Because it is traded on objective chemical lean specifications rather than brand attributes, it integrates efficiently into global supply chains and provides a reliable outlet for pasture-based production systems.

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[19] *Zajkowski, J. www.agdaily.com/livestock/feedlots-around-globe-world-finishes-cattle. Feb 2026*

Top 10 beef markets by value, 12 months ended 30 June 2025

Country	Value (NZ$m)	Annual change
United States	$2,161m	25 percent
China	$913m	-28 percent
Canada	$367m	80 percent
Japan	$292m	-11 percent
Taiwan	$158m	-7 percent
Korea	$146m	20 percent
European Union	$128m	22 percent
United Kingdom	$120m	153 percent
Philippines	$66m	59 percent
French Polynesia	$42m	9 percent

Figure 6: Meat Industry Association, Top 10 Beef Markets 2025

This positioning gives New Zealand a distinct advantage. Lean manufacturing beef is not simply a commodity in the conventional sense, *but a functional ingredient that supports value creation within the global beef system*. Its importance lies in its ability to complement grain-fed production, enabling processors to meet precise product specifications and maximise carcass utilisation. In this way, New Zealand's pasture-based production system plays a specialised and integral role in supporting one of the world's largest protein supply chains.

5.2 Bull Beef Farm Systems – Maximising 'Operational Efficiency'

From a farm systems perspective, manufacturing beef aligns closely with New Zealand's pasture-based production model. Bull beef systems demonstrate strong economic performance relative to prime steer or heifer systems.

Analysis using tools such as Farmax consistently shows higher returns per kilogram of grass consumed in bull beef operations. Contributing factors include higher growth rates, the ability to carry increased stocking rates, and compensatory growth patterns that align with seasonal pasture supply.

FARMAX **Compare Gross Margin for Ridgeway Farms Ltd**

Jul 26 - Jun 27

			SYS - 30 Month Bulls Spring Buy	SYS - DB Steers	SYS - 20/30 Month Bulls	Trad - Steers	SYS - 20 Month Bulls	Total
Revenue	Beef	Sales - Purchases	207,619	182,556	210,216	116,732	199,528	916,650
		Total Beef	**207,619**	**182,556**	**210,216**	**116,732**	**199,528**	**916,650**
	Crop & Feed	Capital Value Change		0	0	0	0	0
		Total Feed		**0**	**0**	**0**	**0**	**0**
	Total Revenue		**207,619**	**182,556**	**210,216**	**116,732**	**199,528**	**916,650**
Expenses	Crop & Feed	Conservation		26,250	15,750	26,250	26,250	94,500
		Total Crop & Feed		**26,250**	**15,750**	**26,250**	**26,250**	**94,500**
	Stock Costs	Animal Health	3,125	1,977	3,401	1,306	3,766	13,576
		Total Stock Costs	**3,125**	**1,977**	**3,401**	**1,306**	**3,766**	**13,576**
	Interest on Capital (livestock & feed)		24,883	23,640	22,300	17,225	22,032	110,079
	Total Variable Expenses		**28,008**	**51,867**	**41,451**	**44,781**	**52,048**	**218,154**
Gross Margin			**179,611**	**130,689**	**168,765**	**71,951**	**147,480**	**698,496**
Gross Margin per Graze ha			**1,796**	**1,365**	**1,732**	**751**	**1,540**	

Farmax Red Meat 8.3.6.2

Figure 7: Farmax analysis comparing various bull policies with dairy-beef steers and a traditional steer trading system. All policies based on 9.5t of DM grown, except traditional extensive steer system based on 7.5t DM grown.

In contrast, within prime beef systems targeting higher-value table markets, only a proportion of the carcass qualifies for premium primal sales. A significant share ultimately enters manufacturing channels. This limits the overall economic uplift achievable from premium positioning alone. Although prime steers target a 'high-end' market, paradoxically the bull beef schedule often matches or out performs the steer schedule.

5.3 Plant Efficiencies

One of the more structural advantages of manufacturing beef lies in processing efficiency.

Prime beef carcasses are typically chilled overnight before boning, as well as requiring ageing. As such, plants require investment in ageing space, with temperature-controlled environments, and inventory management systems linked to brand and market specifications.

In contrast, manufacturing beef carcasses are usually hot boned directly after slaughter. While some primal cuts may be extracted where specifications allow, the majority of the carcass is directed into trim streams and packed into defined classification categories. The relative simplicity of this pathway reduces labour input, handling steps, and operational complexity within the plant, as well as:

- Reduced reliance on cold storage infrastructure
- Lower capital intensity in chilling and ageing facilities
- Shorter inventory holding periods

If a greater share of national throughput were directed toward lean manufacturing streams, processors may have opportunities to optimise plant configuration, and improve overall efficiency.

5.4 Reducing Marketing Intensity

Premium branded beef programmes require significant marketing expenditure, customer engagement, brand development, and ongoing storytelling investment. While these programmes deliver value in targeted markets, they are resource-intensive.

Manufacturing markets are driven more by specification, reliability, and performance than by brand narrative. This does not eliminate marketing altogether. However, it shifts the emphasis from brand storytelling to measurable attributes, and performance credibility. From a processor-exporter's perspective, this reduces overhead risk and allows capital to be directed toward operating efficiency.

5.5 Strategic Positioning and the Ability to Differentiate

Although manufacturing beef sits at the commodity end of the value chain, there is a clear opportunity to differentiate New Zealand's lean beef and position it as a preferred ingredient in global supply chains.

Demand for convenient and affordable protein continues to grow, particularly within quick-service restaurant (QSR) and retail channels. At the same time, multinational food companies are placing greater scrutiny on the environmental credentials of their suppliers as they work toward publicly stated emissions reduction targets. New Zealand's pasture-based production system, supported by traceability and emissions data, is well positioned to meet these requirements.

Lean beef derived from dairy-origin cattle offers particular advantages. Lifecycle analysis by AgResearch indicates that beef from dairy-origin calves have methane emissions intensity up to 48% lower than traditional beef breeding systems, as the majority of emissions from the dam are attributed to milk production. This creates an opportunity to supply verified lower-emissions lean beef into global markets seeking measurable sustainability outcomes.

In this context, New Zealand's lean beef has the opportunity to be elevated to less of a generic commodity and more as a specialised input with defined performance characteristics. Its consistent chemically lean composition, pasture-based origin, and emissions profile align with the technical and sustainability requirements of global processors and food companies.

Positioning manufacturing beef around these measurable attributes shifts the value proposition from brand storytelling to functional performance. Delivering consistent CL specifications, supported by robust traceability and reliable supply, becomes central to meeting customer requirements.

5.6 Branding and Validation

To support the differentiation of New Zealand lean beef there is an opportunity to develop a national brand or verification mark that formally recognises its origin, production system, and functional attributes. A "New Zealand Lean Beef" mark could operate in a similar way to FernMark, providing assurance to global customers that the product meets defined standards relating to origin, environmental performance, and animal welfare.

At its core, the brand would represent a set of clearly defined, verifiable production standards, including pasture-based systems, animal welfare protocols, full traceability, and emissions intensity, with dairy-beef underpinning the positioning. These claims would be independently audited across the supply chain—from farm through to processor—ensuring the mark reflects a credible and measurable standard rather than a marketing construct. Importantly, much of the required verification framework already exists within the industry, particularly through New Zealand Farm Assurance Programme Plus (FAP+), meaning these claims could be substantiated without the need for significant new system development.

A governance structure supported by key industry organisations—including Beef + Lamb New Zealand, DairyNZ, and Meat Industry Association—would ensure alignment across the value chain, while maintaining independence from commercial processors. This separation is important, as international customers increasingly place greater trust in standards that are transparently governed and independently verified.

A nationally recognised New Zealand Lean Beef mark would provide a mechanism to elevate manufacturing beef from an anonymous commodity to a recognised ingredient with defined provenance and performance characteristics. By aligning standards across the supply chain and presenting a unified national proposition, it would create a platform for New Zealand to capture greater value from a product that already plays a critical role in global markets.

5.7 Case Study: Fonterra and the Strategic Positioning of Whole Milk Powder

Whole Milk Powder (WMP) has traditionally been viewed as a commodity product, traded largely on price through global markets. As the world's largest exporter of WMP, Fonterra was historically exposed to the same commodity cycles and price volatility as other producing regions. However, over time, Fonterra has been able to position its WMP as a preferred product for many international customers, achieving stronger demand and, at times, price premiums relative to competitors.

A key factor in this shift was Fonterra's focus on consistency, reliability, and scale. New Zealand's pasture-based dairy system, combined with Fonterra's large, integrated processing network, enabled the company to supply large volumes of product with consistent functional and nutritional characteristics. This reliability became particularly important for food manufacturers who depend on predictable inputs for their own production processes.

Fonterra also invested heavily in supply chain integration and customer relationships. Rather than selling purely through intermediaries, the company developed direct relationships with major global food companies, working closely with them to understand their technical requirements and provide assurance around product quality, safety, and traceability.

In addition, Fonterra leveraged New Zealand's reputation for pasture-based production, strong food safety systems, and export integrity.

Through a combination of consistent product quality, supply reliability, customer alignment, and market leadership, Fonterra was able to differentiate its Whole Milk Powder within a commodity category. While still traded globally, it became a preferred ingredient for many manufacturers, demonstrating how scale, system design, and supply chain trust can shift a product's position within global markets.[20]

5.8 Designing a Purpose-Built Manufacturing Value Chain

To fully realise this opportunity, manufacturing beef would need to be repositioned from an outcome of system variability, and viewed as being second class, to a deliberately designed product stream. This would involve:

- Genetic direction prioritising lean yield and growth efficiency
- Finishing systems focussed around operation efficiency and per hectare performance
- Verified environmental metrics and traceability
- Supply planning to ensure volume reliability throughout the year
- Strategic relationships with global QSR and retail partners

Segmentation between premium table beef and manufacturing beef would need to be explicit. The highest-performing cattle, capable of delivering consistent eating quality, would enter controlled premium programmes. The remainder would be optimised for lean manufacturing supply, where New Zealand holds a strategic advantage.

Such an approach acknowledges that not all beef can or should be positioned as premium table product. Attempting to do so risks undermining New Zealand's brand credibility.

By contrast, recognising manufacturing beef as a specialty ingredient within global blending systems provides clarity of purpose and aligns farm-level economics with downstream market realities.

Manufacturing beef should be considered not merely as a commodity output, but as a differentiated specialty ingredient within global protein markets. Its role in balancing high-fat trim, its alignment with pasture-based farm systems, and its potential environmental credentials collectively present a coherent strategic opportunity.

The pathway forward lies in disciplined segmentation: protecting and strengthening genuine premium programmes, while deliberately designing farm and processor systems to deliver consistent, traceable, and environmentally differentiated lean beef for manufacturing markets. Through this lens, manufacturing beef is recognised not as compromise, but a strategic pillar of New Zealand's beef sector.

[20] *The Fonterra WMP Case Study is based off a presentation by Fraser Whineray (then Fonterra COO) to the NZ Coop Business Forum, Auckland 2022*

Chapter 6: Harnessing the Dairy-Beef Opportunity

"Reducing early calf slaughter is not just an economic imperative – it's a reputational one. A more integrated dairy-beef system may help protect New Zealand's global brand and future-proof its livestock sector." (Jen Corkran, Rabobank Senior Analyst)

While the bobby calf system has historically been considered economically rational within a dairy-focused model, it increasingly appears misaligned with societal expectations and global protein demand.

According to a 2025 Rabobank report titled *The Strategic Moment for Dairy Beef in New Zealand*, at market prices for the 2024/25 export season, rearing an additional 600,000 surplus calves could unlock well over $1.2 billion in value.

6.1 Global Context and Emerging Partnerships

New Zealand remains the only major dairy-producing nation with a substantial bobby calf kill. Globally, integration between dairy and beef sectors is becoming more structured. In the United States, dairy-beef crossbreeding has increased significantly over the past decade, supported by strong packer demand and contract pricing. Dairy-origin cattle now represent a large proportion of the US beef supply,[21] while in Europe, cross-border calf movements and structured veal production demonstrate coordinated value chains capable of absorbing surplus dairy calves at scale.

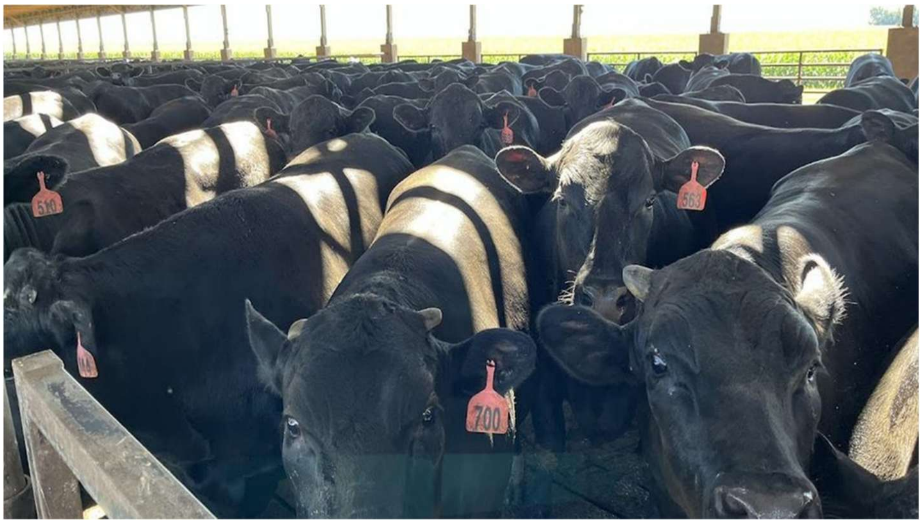

Image: Dairy-beef in a finishing barn, Minnesota

The case for utilising surplus dairy calves is well documented. Benefits include:

- Strengthening overall farm profitability for the dairy farmer
- A ready supply of young stock for beef farmers
- A reduced need to carry breeding cows
- A more flexible finishing model aligned with the pasture growth curve
- Reduced methane intensity per kg of product

[21] *Munch, D. Beefing up Dairy, The Rise of Crossbreeding. 2024*

Programs for dairy-beef calves, focused on lifting them into a premium category exist in New Zealand, but volumes are not where they need to be to significantly impact numbers of young calves slaughtered.

One example is Pearl Veal, a differentiated value chain that sources surplus dairy calves and grows them under specific nutrition, welfare, and management standards to produce a consistent, high-quality veal product. Calves are reared on specialised milk-based systems and processed at lighter weights, producing tender, rose-coloured meat suited to premium food service and retail markets. By linking dairy farmers, rearers, and processors in a coordinated supply chain, Pearl Veal is transforming a traditionally low-value by-product into a premium product with a smaller environmental footprint per kg of saleable meat, delivering improved outcomes across the value chain.

Mīti is another example, creating a premium pathway for young dairy-beef calves through a fully integrated, branded product. Instead of being treated as a low-value by-product, calves are reared to defined specifications and processed into high-protein beef snacks, targeted at athletes and health-conscious consumers. This value chain aligns supply with a specific, high-value end use, capturing value through branding, provenance, and product differentiation, and demonstrating the potential to reposition dairy-beef calves as a premium protein source.

6.2 Genetics as the Foundation

Realising the dairy-beef opportunity requires a deliberate and coordinated genetic strategy aligned with the intended end market.

Historically, beef sires used over dairy cows were selected primarily for natural mating, with dairy farmers placing emphasis on visible traits such as coat colour, which provided assurance the calf was beef-sired, and on calving ease to minimise risk and labour at calving. While these traits were important for the dairy system, they did little to ensure the resulting calves were well suited to the needs of beef finishers or processors. This approach produced calves of highly variable value and performance within the beef supply chain.

As the system has evolved, artificial insemination has enabled the use of sires with proven genetic merit across a much larger proportion of the dairy herd. The current focus has been on so-called "curve bender" sires, which combine low birthweight with high growth rates. These sires are designed to meet the dairy farmer's requirement for easy calving while also producing progeny capable of achieving acceptable growth and carcass performance. Some carcass traits are considered, but in practice, the strongest selection pressure remains on calving ease and growth efficiency.

This reflects the underlying economic signals within the system. Dairy farmers receive limited additional value for calves with superior eating quality traits, while beef finishers are primarily rewarded for growth rate and kilograms of carcass produced. As a result, genetic selection has largely been optimised for on-farm efficiency rather than consumer-driven quality attributes. The outcome is a cohort of dairy-beef animals that often sit between market segments: inconsistent in their ability to meet the specifications required for premium chilled-beef programmes, yet also not fully optimised for efficient lean beef production.

Attempting to produce premium table beef from dairy-origin animals within an all-grass system presents further challenges. Traits such as intramuscular fat can be difficult to consistently achieve, while fat colour sometimes doesn't align with consumer preferences.

If, instead, surplus dairy-beef calves were deliberately directed into a manufacturing beef value chain, the genetic objective would change. In this context, traits such as marbling and intramuscular fat are sidelined. Selection pressure can focus on growth rate, feed conversion efficiency, and carcass yield. The goal becomes the efficient production of lean beef rather than attempting to replicate grain-fed premium eating quality outcomes.

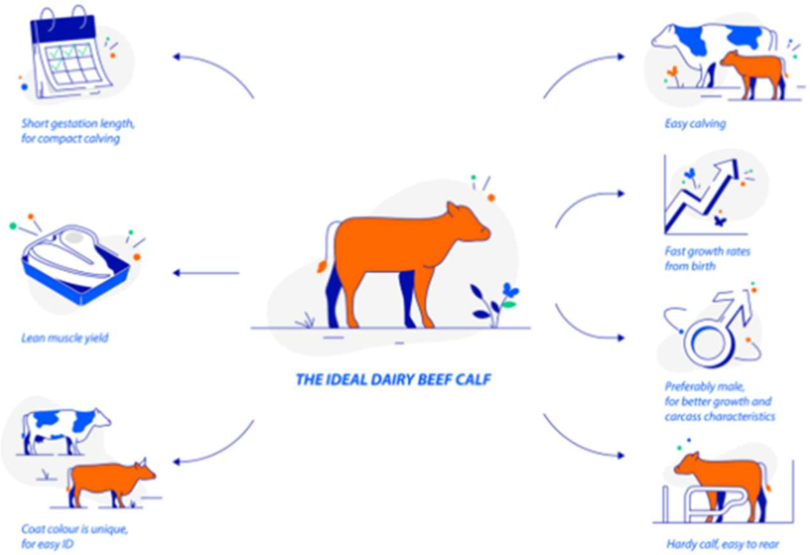

Figure 8: Rabobank: Strategic moment for 'dairy' beef – New Zealand agriculture's $1.2 billion opportunity

The use of male sexed semen within dairy herds becomes central to this approach. By producing predominantly male calves from superior beef sires, dairy farmers can increase the proportion of animals suitable for finishing as entire bulls. Entire males exhibit higher growth rates and superior feed efficiency compared to steers and heifers, and their compensatory growth aligns well with New Zealand's seasonal pasture supply and farm systems designed to maximise output per hectare. Conversely steers will tend to lay down more fat, and will likely fall outside of the 90 – 95CL specifications that are desirable for lean beef.

Breed selection may also warrant reconsideration. While Angus genetics dominate premium beef programmes, other breeds offer advantages in lean beef production. Breeds such as Limousin or Belgium Blue are known for high carcass yield, muscularity, and lean meat percentage, traits that align well with a manufacturing-focused value chain. However, at a broader level, breed itself is less important than the individual traits being expressed. In a manufacturing system, the most suitable sires will be those that deliver superior performance in growth rate, yield, and lean meat efficiency.

6.3 Developing a Calf 'Production Worth' System

A step in strengthening the dairy-beef pathway would be the development of a calf ranking system based on "production worth," similar to the PW (Production Worth) and BW (Breeding Worth) indices used in the dairy industry.

Dairy farmers have long relied on these indices to make confident breeding and purchasing decisions, backed by robust data around milk solids production, fertility, and longevity.

A comparable index for dairy-beef calves could rank animals based on growth rate potential, feed conversion efficiency, carcass yield, and lean percentage outcomes.

Such a system would provide clarity and confidence for calf purchasers. Instead of buying on breed reputation or visual assessment alone, finishers could make data-informed decisions about how that calf is likely to perform through to slaughter.

Over time, this would drive genetic alignment across the system, reduce variability, and support more predictable outcomes. It would also allow price differentiation at the calf stage, rewarding dairy farmers who invest in superior beef genetics and reinforcing the integration between dairy and beef sectors.

By quantifying "production worth" in beef terms, the industry could move from opportunistic calf trading to a structured, performance-driven supply chain — one designed from the dairy shed through to the processing plant with lean beef outcomes in mind.

6.4 Rearing Systems and Finishing Land Capacity

"If New Zealand wants consistent beef supply and long-term value, it may need to invest more in calves. The industry also needs to rethink economic models and incentives for calf rearing to avoid future boom-bust rearing cycles." Jen Corkran, Rabobank Senior Analyst

Calf rearing represents one of the highest-risk and most financially unpredictable stages within New Zealand's dairy-beef supply chain. Profitability for calf rearers is highly sensitive to calf purchase price, feed costs such as milk replacer, and the eventual sale price of the weaned calf, and consequently the margins can be very narrow.

Rearers also carry significant animal health risks, as young calves are vulnerable to health issues and mortality, and poor early-life performance can reduce growth rates and downstream profitability. These risks, combined with fluctuating calf prices and input costs, create a boom-and-bust cycle where rearers may incur losses in some seasons and withdraw from the market entirely. This contributes to inconsistent calf supply, with industry surveys noting that calf rearing remains a challenging and poorly coordinated part of the dairy-beef sector.[22]

As a result, the availability of reared calves can vary significantly from year to year, highlighting calf rearing as a key structural bottleneck in scaling dairy-beef production in New Zealand.

One potential response to this uncertainty is to integrate calf rearing directly within sheep and beef farming operations. As many of these farms have reduced or eliminated their

[22] *Beef + Lamb New Zealand, Dairy-beef survey, 2026*

traditional beef cow herds, rearing their own replacement youngstock represents a way to secure supply and improve control over animal quality. The approach requires upfront capital investment, particularly in purpose-built calf sheds and feeding infrastructure, but it also provides greater certainty over the performance and availability of animals entering the finishing system.

Modern calf-rearing facilities, including automated milk feeding systems, represent a significant advancement in both labour efficiency and animal management. These systems allow calves to be fed more consistently, improve growth outcomes, and reduce reliance on manual labour. Importantly, they also generate valuable data on individual calf performance, health, and intake, enabling better selection and management decisions.

The next constraint in the system is land availability. Under current growing systems, New Zealand lacks sufficient land to take an additional 1.8 million calves to finishing weight. This report does not look to solve this problem in full, but rather to go a way towards utilising more of these animals.

Addressing land constraint requires challenging how beef is produced. More intensive finishing systems may be necessary to unlock scale. 'Efficient Beef Systems' can significantly lift stocking rates and will be discussed in the following chapter. Different classes of land will be more suited to different age groups of animals, and contractual relationships or integration of the rearer, backgrounder, and finisher could improve efficiency.

Alignment with New Zealand's seasonal pasture growth remains critical to maintaining our competitive advantage. Bulls, in particular, exhibit compensatory growth, allowing them to respond strongly to improved feed availability following periods of restriction. This biological trait can be leveraged within pastoral systems to smooth feed demand across seasons.

6.5 A Scalable Pathway for Beef Farming

New Zealand's beef sector faces structural challenges around scale. The national beef cow herd has declined, land-use competition has intensified, and premium positioning remains constrained by variability.

Dairy-beef integration offers a scalable pathway, and growth for the industry. Rather than expanding the breeding herd, supply growth can come from more effective utilisation of existing dairy calves. This approach leverages an existing biological resource without requiring additional breeding cows and associated emissions.

In a manufacturing-focused strategy, scale is not a liability but an advantage. Consistent, high-volume supply strengthens relationships with global QSR and retail partners. It improves processing plant utilisation and reduces per-unit costs.

The key is discipline in segmentation. Not all dairy-beef animals will meet premium table-beef specifications. Attempting to force them into that category risks repeating the misalignment identified in earlier chapters. Instead, aligning dairy-beef systems with lean manufacturing objectives creates coherence across genetics, feeding, processing, and market positioning.

6.6 Aligning Strategy with Reality

New Zealand's pastoral system has inherent strengths in producing lean beef efficiently. The dairy sector provides a large, underutilised calf resource. Global manufacturing markets require precisely the type of lean beef product New Zealand can produce.

Harnessing the dairy-beef opportunity requires alignment across sectors. It requires clarity around market focus, disciplined genetic selection, investment in traceability, and the evolution of feeding/grazing systems to increase per-hectare output.

What is clear is that surplus dairy calves represent one of the largest untapped resources within New Zealand's red meat sector. When aligned with a differentiated manufacturing beef strategy, they offer a pathway to greater scale, improved emissions intensity, and enhanced economic returns for the dairy farmer and the red meat sector.

Chapter 7: NZ Farm Systems that Support a Strategic Strength in Lean Beef Production

Leveraging New Zealand's natural advantage in producing lean beef requires a shift in how we think about farm systems. If lean manufacturing beef is not a fallback, but a deliberate strategic strength, then our on-farm models can be adjusted to reflect this.

This does not mean every farmer must become a bull farmer, nor that existing systems are fundamentally flawed. It does mean we need to be clearer about segmentation. The very best cattle should be directed into tightly specified premium programmes. The remainder should be farmed in systems designed deliberately to support on-farm efficiency, lean yield, and environmental credibility.

It may not be every farmer's dream to run bulls. Bulls carry management challenges, infrastructure demands, and perceived risk. However, when designed well, a system can be structured to reduce those challenges and deliver strong economic and environmental performance. Being highly profitable can sometimes overcome reservations about changes in farm systems.

7.1 A Description of Efficient Beef Systems

"From 50 years of working on farms, beef systemisation is the best by far. In all the farms where we have put systems in place, we have at least doubled, and sometimes trebled production and profit. It's probably one of the biggest opportunities we have in sheep and beef farming". Bob Thompson, AgFirst.

An Efficient Beef System is a pasture-based grazing system designed to maximise the production of beef per hectare by optimising pasture utilisation, stocking rate, and animal performance. The concept, pioneered in New Zealand by Harry Weir and further developed by industry practitioners such as AgFirst's Bob Thompson, is built on the principle that pasture is the lowest-cost feed available and should be managed to grow and utilise as much as possible.

At its core, the system involves allocating a defined area of land—typically between 5 and 20 hectares—to a single mob of cattle. This area is subdivided into around 15 smaller paddocks, or "cells," using electric or virtual fencing. Cattle are rotationally grazed through these cells, with rotation lengths adjusted to match seasonal pasture growth. In spring and autumn, rotations will be around 20-30 days, extending to 60–120 days over winter when pasture growth slows.

A key principle of the system is building and maintaining high pasture covers. Rather than relying on conserved supplements such as hay or silage, feed is effectively stored as standing pasture going into winter. Pre-grazing pasture covers typically exceed 3,000kg dry matter per hectare, going into the winter, with post-grazing residuals of around 1,100–1,200kgDM/ha. The approach allows farms to carry higher liveweight per hectare through the winter and fully utilise the rapid pasture growth that occurs in spring.

Stocking rate is determined by kilograms of liveweight per hectare rather than animal numbers, with a typical target of 800–1,200 kg liveweight per hectare depending on pasture production. Efficient Beef Systems commonly increase pasture growth by 25–30 percent due to higher average pasture covers, which improves photosynthesis, and rotational grazing which improves regrowth.

Animal selection is also important. Bulls are often preferred because they convert feed into carcass weight more efficiently than steers or breeding cows, and exhibit the strongest compensatory growth after a period of feed restriction (the winter period). Profitability is driven by total number of animals per hectare x margin per head.

Overall, Efficient Beef Systems represent a structured, data-driven approach to grazing management. By aligning stocking rate, rotation length, and pasture cover with seasonal growth patterns, these systems improve both farm profitability and environmental outcomes while making full use of New Zealand's pasture-based advantage.[23]

7.2 Finishing Dedicated Dairy-Beef Bulls to Lower Weights

In a prime system animals have to be pushed to heavy weights to ensure carcass characteristics like marbling. When animals are destined for manufacturing markets, moderate liveweights, delivered consistently, may offer a stronger economic and environmental outcome.

As animals become heavier a greater proportion of feed is directed toward maintenance rather than weight gain. Finishing at lower weights preserves feed efficiency, allows a higher number of animals to be processed across a season, supporting smoother livestock flow through processing plants.

Farmax modelling below shows that a 'one winter' system ('20 month bulls, finish all') is achievable and profitable with an average carcass weight of 270kg, and all animals killed by the end of April.

		Finishing Steers	30 month bulls spring buy	2yr Bulls	20 month bulls Finish all
	GM / DM (c/kg)	34.7	39.5	40.0	36.9
	GM / Product (c/kg)	737.6	751.1	790.7	616.1
	kgDM / kg Product	21.3	19.0	19.8	16.7
	% of Feed Eaten	32.3	29.5	17.3	20.9

Figure 9: Farmax modelling buying calves at 100kg (except 2yr bulls) and finishing. Steers vs different bull policies.

[23] *Scene + Herd Podcast: Better Beef Systems with Bob Thompson, Ben Trotter and Matt Tayler. 2025*

7.3 Winter grazing

Winter is often the period of highest environmental risk on hill country farms. Heavy animals, short rotations, and wet soils contribute to sediment and phosphorus loss into waterways. A system that takes bulls through only one winter reduces this risk. Animals can be processed before reaching very heavy weights and behavioural challenges.

Long winter rotation lengths — potentially 90+ days — allow pasture recovery and protects soil structure. Maintaining dense swards improves resilience and reduces erosion. Designing systems that balance environmental stewardship with economic performance is essential for long-term social licence.

7.4 Virtual Fencing to Scale Beef Farming

Infrastructure constraints have historically limited the adoption of more intensive and structured grazing systems on New Zealand hill country. The cost of conventional subdivision using permanent fencing has increased significantly, and there is a growing shortage of skilled labour to undertake fencing development and maintenance. As a result, many farms remain under-subdivided relative to what would be required to fully implement high-performance grazing systems such as Efficient Beef Systems.

Virtual fencing presents a significant opportunity to overcome these constraints. By enabling paddocks to be created digitally, without the need for permanent physical infrastructure, virtual fencing allows farmers to implement the level of subdivision required for controlled rotational grazing. Early adoption has demonstrated that virtual fencing can support higher stocking rates, improved pasture utilisation, and more consistent grazing management. It also enables more precise control over grazing timing, including the ability to lengthen winter rotations, manage deferred grazing areas, and shift cattle frequently without increasing labour input[24]. This aligns directly with the objectives of Efficient Beef Systems, which rely on maintaining higher average pasture covers to drive greater total pasture production.

In addition to production benefits, virtual fencing enables improved environmental management. Waterways, erosion-prone land, and sensitive areas can be excluded quickly and flexibly, without the need for permanent fencing. This supports compliance with environmental regulations while maintaining productive land use.

As subdivision becomes easier to implement, water reticulation becomes the key enabling infrastructure. Reliable water supply to smaller grazing areas is essential for animal performance and system function. In many cases, investment in water systems may become the primary physical development required to support intensification.

The combination of virtual fencing and Efficient Beef Systems represents a significant opportunity for New Zealand's hill country. Together, they provide a pathway to increase beef production per hectare, improve pasture utilisation, and maintain environmental standards, while reducing the capital and labour barriers that have historically limited system change.

[24] *Cave, N. Kellog Report: Beef on the Brink of a Tech Revolution: Wearables on NZ Hill Country. 2025*

7.5 Farmer Case Study: Jon and Fiona Sherlock – Supreme Winners of the Waikato Ballance Farm Environment Awards

Transforming Hill Country Profitability through Efficient Beef Systems

Jon and Fiona Sherlock's 660-hectare hill country farm faced an uncertain future just a few years ago. Declining sheep returns, high debt, and the physical limitations of their steep country had placed increasing pressure on the business. Like many hill country farmers, they began questioning whether their system was financially sustainable and whether they would be able to pass on a viable farming operation to the next generation. Forestry and carbon farming were seriously considered, and in 2022, 150 hectares of their hardest Class 7 land was converted into production forestry.

However, rather than committing the entire farm to trees, the Sherlocks decided to trial an alternative: Efficient Beef Systems. Starting cautiously, they established a 20-hectare trial using temporary electric fencing. The concept of doubling cattle stocking rates on hill country initially felt high risk, but the potential to improve profitability justified the experiment.

The results were immediate and measurable. Farmax modelling showed their previous system had been harvesting around 4tonnes of dry matter under breeding ewes. Under the Efficient Beef System, pasture harvested increased to approximately 7tonnes, and represented a significant lift in saleable product within a single season.

Encouraged by the initial success, the Sherlocks expanded the system. Winning a Halter virtual fencing competition provided access to the technology, which proved to be a key enabler of scale. In their second winter 100ha was allocated to EBS with virtual fencing and in this coming third winter, 230 hectares of hill country, with a further 40 hectares of easier country for older cattle will be on stream.

The financial impact has been significant. Within two and a half years, the farm has doubled its profitability on that area. Where off-farm income had previously been necessary to support the business, the farm is now generating sufficient returns to reinvest in infrastructure, including new cattle yards and soil fertility improvements.

Environmental outcomes have also improved. The ability to exclude stock from waterways across large areas was achieved overnight, positioning the farm ahead of regulatory requirements. High average pasture covers have protected hill slopes and virtual fencing has enabled regular shifts, especially useful during periods of inclement weather. This was validated with the Sherlocks being named the Waikato Regional Supreme Winners at the Ballance Farm Environment Awards.

Perhaps most importantly, the Sherlocks' outlook for the future has fundamentally changed. What was once a business facing decline and uncertainty is now profitable, scalable, and future-focused. Efficient Beef Systems, supported by virtual fencing, provided a viable pathway to increase production and profitability on hill country previously considered marginal for livestock farming.

Chapter 8: Processors are Central to a Successful Value Chain

New Zealand's meat processing sector is facing increasing pressure as stock numbers decline and competition for livestock intensifies. Processors are competing more aggressively to secure cattle placing upward pressure on procurement pricing and compressing already tight margins.

A strategic shift toward lean manufacturing beef and greater dairy-beef integration must work not only at farm level, but also for the processor-exporter. Processors sit at the centre of the value chain. For the strategy to succeed, farm systems must align with plant economics, carcass yield expectations, labour realities, and capital utilisation requirements.

8.1 Genetics and Yield

A concern among processors regarding increased dairy-beef supply is carcass yield performance.

Traditional beef steers and heifers — particularly from established beef genetics — often deliver stronger dressing-out percentages and red-meat yield than dairy-origin animals. If dairy-beef cattle produce lower carcass yields, processors face the risk of running full chains while harvesting less saleable meat per animal.

If the strategic emphasis shifts away from attempting to produce prime table-beef animals from dairy-origin calves and instead focuses on lean manufacturing beef, genetic priorities can change accordingly. Growth rate, frame size, muscling, and carcass yield become the central traits. This shift would support efficiency for both the farmer and the processor.

8.2 Throughput and Flow of Stock

Throughput and plant utilisation are central to processor performance. Processing plants carry substantial fixed costs — including labour, energy, compliance, maintenance, and capital servicing. When chain capacity is underutilised, these fixed costs are spread across fewer carcasses, increasing the cost per unit processed and placing pressure on margins.

A consistent and predictable livestock supply is therefore critical to the ongoing viability and success of the processing sector. One of the ongoing challenges for processors is uneven stock flow throughout the year.

Seasonal peaks and troughs lead to plants operating at full capacity during summer and autumn, followed by reduced throughput in winter. Droughts and grass flushes make for further disruptions to a steady flow of stock. This fluctuation affects operational efficiency and makes workforce retention challenging.

A manufacturing-focused dairy-beef system has the potential to help smooth this kill profile. Unlike premium chilled-beef programmes, where animals are held to achieve specific fat cover or marbling targets, cattle destined for manufacturing markets can be processed once they reach commercially viable weights. This flexibility provides greater control over timing and allows animals to be scheduled for slaughter during periods when supply would otherwise be tight.

Shorter production cycles on farm may also contribute to improved stock flow. Finishing animals to moderate weights rather than holding them to heavier prime specifications reduces the time cattle are carried, creating more flexibility across seasons.

A more even kill profile benefits processors in several ways:

- Higher and more consistent chain speeds
- More stable labour utilisation and improved workforce retention
- Lower fixed cost per unit processed
- Greater confidence in forward contracting with overseas customers
- Improved cashflow predictability

When viewed in this context, farm system design and processor economics are closely linked. An enhanced system structured around lean manufacturing beef has the potential to support both improved plant efficiency and more stable supply dynamics across the year.

8.3 Payment Structures and Incentives

Processor alignment also depends on pricing mechanisms. If dairy-beef calves are discounted due to perceived yield risk, farmers will not invest in genetic improvement. Conversely, if processors reward high-yield dairy-beef animals through transparent grading and payment schedules, behaviour will change.

Clear feedback loops are essential. Carcass data must flow back to finishers and, those involved with genetic supply. Over time, this builds a performance-driven system.

Contracting may also become more common. Processors seeking reliable lean supply may offer forward contracts tied to CL specifications, yield, supply timing or other desirable metrics. This reduces market volatility for farmers and supply risk for processors.

8.4 Plant Configuration and Investment

If lean manufacturing throughput increases significantly, plant configuration may need to adapt.

Plants currently designed around premium primal cuts and ageing may find greater efficiency in streamlined hot-boning operations. Investment priorities could shift toward:

- Trim sorting technology
- CL testing accuracy
- Automation in blending and boxing
- Energy recovery in hot-boning rooms

These changes are incremental rather than revolutionary. However, strategic clarity around the value chain could provide processors confidence to invest accordingly.

8.5 Risk Considerations for Processors

While the lean manufacturing opportunity is attractive, processors will assess risk carefully. Key concerns include:

- Procurement and supply of stock
- Yield dilution from poor genetics

- Over-supply risk in global manufacturing markets
- Exposure to US market volatility
- Trade access and tariff structures

These risks are manageable but require coordinated strategy. Genetic improvement programmes, diversified export markets, traceability systems, and high welfare and environmental standards must underpin the value chain. Efforts must be made to differentiate the product and for New Zealand to become the supplier of choice.

8.6 New Zealand's Competitive Advantage

The integration of dairy-beef into a lean manufacturing strategy is not simply a farm-level shift. It is a whole value-chain opportunity, with processors being central to this evolution.

If New Zealand accepts that lean manufacturing beef is a structural strength rather than a secondary output, processor systems can evolve accordingly. Alignment between dairy genetics, beef growing and finishing systems, and plant operations becomes the foundation of a coherent national strategy.

Chapter 9: Conclusion – A Framework for the Future of the New Zealand Beef Industry

9.1 The Strategic Choice: Clarity of Position

The New Zealand beef industry stands at a strategic crossroads. Previous chapters have demonstrated that while New Zealand produces beef efficiently within pasture-based systems, it does not consistently capture the highest value in global markets. This is not a failure of production, but a consequence of strategic positioning. New Zealand's grass-fed system delivers clear strengths, particularly in the efficient production of lean beef, yet the industry has often attempted to position a broad and variable product range into premium chilled beef markets defined by consistency and eating quality.

The future success of the sector depends on strategic clarity. Rather than attempting to elevate mediocre beef into premium categories, the industry must deliberately segment production according to its natural strengths and align each segment with the market where it creates the most value.

The strategic pathway forward is built on a dual focus: protecting and strengthening elite premium beef programmes capable of delivering consistent, high-value eating experiences, while simultaneously recognising lean manufacturing beef as a specialised, strategically important ingredient within global protein markets. This approach aligns New Zealand's biological and environmental advantages with global market realities.

In this model, success does not depend on competing directly with grain-fed systems in their areas of strength, but on maximising value within the segments where New Zealand holds genuine structural advantage.

9.2 Deliberate Segmentation of the Beef Industry

A disciplined segmentation strategy provides the foundation for future industry structure. New Zealand's beef supply divides naturally into two streams, each with its own genetics, production systems, market pathways, and value drivers.

The first stream is elite premium beef. These are cattle bred, finished, and processed to consistently deliver an exceptional eating experience — and only a minority of New Zealand's herd is genuinely capable of meeting that standard. These animals belong in tightly specified, market-led programmes with coordinated genetics, defined finishing protocols, and contractual supply arrangements. Premium is earned through eating quality, not claimed through production method. Farmers and processors who commit to this stream deserve the superior price point that rewards that commitment.

The second stream — and by volume the larger one — is lean manufacturing beef. This is not a consolation prize. It is a strategically important, globally sought ingredient that New Zealand produces more efficiently and more sustainably than almost any other country. Pasture-raised, naturally lean, with a verifiable environmental profile: this is product that the world's biggest food companies need, and will increasingly pay attention to. The opportunity is to stop treating it as a residual output and start designing the entire system around it.

This segmentation allows each part of the industry to optimise for its intended purpose. Premium programmes focus on delivering exceptional eating experiences for high-value markets, while manufacturing systems focus on efficient, consistent production of lean beef at scale.

Attempting to position all beef as premium risks undermining the integrity of premium programmes and ignores the strategic value of manufacturing beef. Clear segmentation enables both pathways to succeed.

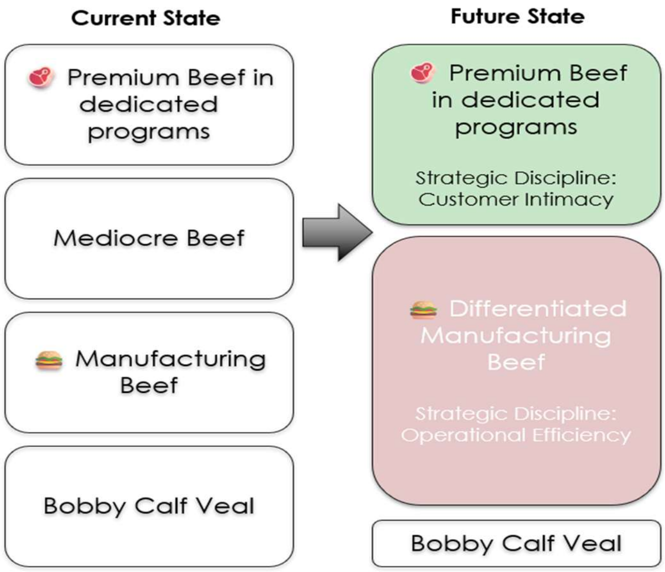

Figure 10: Conceptual model illustrating strategic segmentation of New Zealand beef supply to maximise value, with increased focus on premium beef and specialised manufacturing beef streams

9.3 Elevating our Premium

Premium beef programmes play an important role in the future industry, but their success depends on disciplined execution. Premium cannot be defined solely by production method. It must be defined by the eating experience delivered to the consumer.

This requires alignment across the entire value chain. Genetics must be selected for eating quality outcomes, including marbling and tenderness. Finishing systems will support consistent carcass development. Processing protocols, including ageing and specification compliance, need to be maintained. These programmes must be supported by coordinated supply chains, ensuring animals capable of meeting premium specifications are identified and managed accordingly.

Historically, industry thinking may have been: *these are the systems that work efficiently and at a cost advantage in New Zealand — how do we sell them?* The harder question may be: *what does the customer truly value, and are we prepared to build our systems around that?*

Examples such as Ocean Beef and Lumina Lamb demonstrate that New Zealand can successfully deliver premium red meat when systems are purpose-built. These programmes show that premiums are achieved not through marketing alone, but through structural alignment between production, processing, and market requirements.

Premium beef programmes will always play an important role in New Zealand's industry. But they will represent a selective, well-defined portion of total production — not the default positioning for everything. Their role is to capture maximum value from the animals and systems genuinely capable of delivering it, while the broader herd is optimised for the lean manufacturing stream where New Zealand's advantage is clearest and most scalable.

9.4 Lean Manufacturing Beef as a Strategic Pillar

Lean manufacturing beef already plays a structurally important role within global protein markets, particularly as a complementary input into grain-fed beef systems. This is not a niche product or a secondary market — it is the backbone of the global hamburger supply chain, The question is not whether lean manufacturing beef matters. It is whether New Zealand will continue treating it as an anonymous commodity, or ive it the strategic recognition it deserves.

The competitive advantage is real and durable. New Zealand's pasture-based system produces beef that is naturally lean, cost-efficient, and aligned with the growing sustainability requirements of global food companies. Dairy-beef integration deepens that advantage further, producing animals with emissions intensity up to 48% lower than traditional beef breeding systems. These are credentials that multinational quick service restaurant (QSR) chains, retailers, and food manufacturers are actively seeking as they work toward their own emissions targets.

Elevating lean manufacturing beef from anonymous commodity to recognised, differentiated ingredient requires a national platform to support it. A "New Zealand Lean Beef" verification mark — independently audited, covering origin, animal welfare, traceability, and verified emissions intensity — would give global customers the assurance they need and give New Zealand a unified commercial proposition to take to market. Fonterra's repositioning of whole milk powder demonstrates that this is achievable: consistency, supply reliability, and customer alignment can transform how a product is perceived and priced, even in a market dominated by commodities.

9.5 Dairy-Beef as the Engine of Future Growth

Dairy-beef systems align strongly with manufacturing beef objectives. With the right genetics and sexed semen, these animals can demonstrate efficient growth, high lean yield, and favourable emissions profiles. Directing surplus dairy calves into structured beef production systems increases overall sector productivity without requiring expansion of the traditional beef breeding herd.

Dairy-beef aligns precisely with manufacturing beef objectives. With sexed beef semen applied to the right sires, dairy farms can produce predominantly male calves with superior growth rates, lean yield, and feed conversion efficiency. This represents a scalable growth pathway that strengthens both the dairy and beef sectors simultaneously, without requiring expansion of the beef breeding herd.

Realising this opportunity requires investment in calf rearing infrastructure, a production worth ranking system to give finishers confidence in calf genetic merit, and closer contractual integration between dairy farmers, rearers, and beef finishers. It requires coordinated, industry-wide action that New Zealand's red meat sector is capable of if it chooses to act with purpose.

9.6 The Role of Processors as Value Chain Integrators

Processors play a central role in enabling this strategic shift. As the link between farm and market, processors are uniquely positioned to coordinate supply chains, provide market signals, and support alignment across the industry.

This will require greater integration between processors and producers, including clearer specification requirements, structured supply arrangements, and stronger feedback loops. By aligning procurement with defined market pathways, processors can support consistent supply into both premium and manufacturing segments.

Improved alignment benefits processors through more consistent throughput, improved plant utilisation, and stronger customer relationships. It also provides farmers with clearer production signals and greater confidence in investment decisions.

9.7 Farm System Alignment and Production Efficiency

At the farm level, system design must align with the intended market outcome. Efficient beef systems offer strong economic performance and align well with manufacturing beef production. These systems maximise pasture utilisation, improve production per hectare, and support increased scale.

Technologies such as virtual fencing provide new opportunities to implement structured grazing systems at scale, particularly on hill country farms. These tools enable improved pasture management, increased stocking rates, and enhanced environmental management.

Farmers will continue to operate diverse systems, but greater clarity around market pathways will allow production decisions to align more closely with value creation.

9.8 Industry-Level Benefits

The benefits of strategic alignment compound across the entire industry. For New Zealand's export position, a recognised lean beef brand with verified environmental credentials creates a platform for stronger commercial relationships with the world's largest food companies.

More effective utilisation of the 1.8 million surplus dairy calves each year improves emissions efficiency per kilogram of beef produced, reduces the reputational risk associated with the bobby calf kill, and increases overall sector productivity without requiring additional land or additional breeding cows. These gains are available now, from resources that already exist.

The longer-term benefit is the revitalisation of hill country farming. New Zealand's sheep and beef farms are the foundation of rural communities across the country. Efficient Beef Systems and dairy-beef integration offer a genuine economic pathway for farms that have struggled with declining returns and land-use pressure. An industry with a clear strategic direction is one that can offer farmers a future worth investing in.

9.9 Implementation and Transition

This is not a strategy that requires the industry to reinvent itself. The pasture-based systems, the dairy-beef resource, the processing infrastructure, the global customer relationships — these all exist. What is required is a change in intent and coordination: processors committing to structured supply arrangements and transparent price signals; genetic direction aligned around lean yield and growth efficiency for manufacturing cattle; industry organisations working together to develop and govern a national lean beef verification mark; and farmers investing in the systems that fit their land and their market pathway.

Importantly, this strategy builds on existing strengths. It does not ask the industry to abandon what it does well — it asks the industry to be honest about where those strengths truly lie, and to build around them with conviction.

9.10 A Virtuous Cycle

The strategic alignment of dairy-beef integration, efficient farm systems, and global manufacturing beef markets creates a powerful economic flywheel. As supply scales and throughput increases, processors operate more efficiently and strengthen relationships with global customers. This improves the stability and value of farmgate returns, encouraging further investment in dairy-beef systems and efficient production. Over time, this creates a virtuous cycle that strengthens the competitiveness and resilience of New Zealand's beef industry as illustrated by Figure 10.

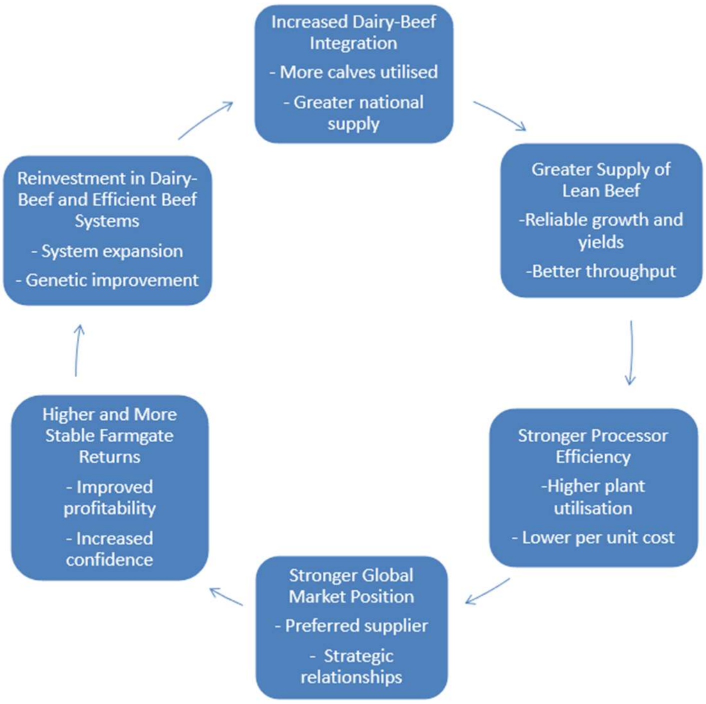

Figure 11: The economic flywheel created by deliberate alignment of dairy-beef integration, lean manufacturing supply, and global market positioning.

9.11 The Future Position of New Zealand Beef

The New Zealand beef industry has more going for it than its domestic narrative sometimes suggests. It supplies 80 countries, generates $5 billion in export revenue, operates within one of the most efficient pasture-based production systems in the world, and holds a structurally unique position in the world's largest beef supply chain. Our industry is one with an enormous amount to build on.

The path forward is clear: deliberate segmentation, strengthening premium programmes that genuinely earn their positioning, and investing with confidence in lean manufacturing beef as a strategic pillar — differentiated, traceable, and underpinned by the dairy-beef resource that gives New Zealand a supply and emissions advantage that no other grass-fed country can easily replicate.

In this future, New Zealand is recognised not only for its premium grass-fed beef, but as the world's most trusted and most sustainable supplier of lean beef — an ingredient that the global food system depends on, and that New Zealand has a competitive advantage in producing.

The rural communities that depend on this industry — the hill country farms, the processing towns, the families who have built their livelihoods around New Zealand beef — deserve a sector that is honest about its strengths, strategic about its positioning, and confident about its future. This report is offered in that spirit.