Strong Wool, Stronger Returns

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2025 Nuffield Scholar

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I wish to thank the below Investing Partners for their support over my scholarship period and beyond.

NZRLT Partners

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In submitting this report, the Scholar has agreed to Nuffield New Zealand publishing this material in its edited form.

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Executive Summary

New Zealand's strong wool sector sits at a critical crossroads. Despite producing a natural, renewable fibre aligned with global sustainability narratives, many strong wool growers continue to face persistently low farm-gate returns, often insufficient to cover the cost of harvesting. At the time of publication (February 2026), strong wool prices have lifted to approximately NZD $5.50–$6.50 per kilogram clean for crossbred lines, levels now approaching or, in some cases, covering average shearing costs in many regions (PGG Wrightson Wool, 2026; Beef + Lamb New Zealand, 2025). While this represents a welcome short-term improvement for growers, it potentially reflects cyclical market movement, or supply and demand reaction, rather than structural value-chain reform. The commercial questions explored in this report therefore remain highly relevant.

This report investigates that question through an international, market-led lens. It deliberately begins with the market, the research examines how value is assessed and rewarded by buyers further along the supply chain. The study explores how international markets evaluate strong wool, what signals influence procurement decisions, and how those signals can be translated back to the farm gate in ways that improve grower profitability and long-term sector resilience.

The research draws on qualitative interviews and case studies conducted across key strong wool and wool-influenced markets in the United States, the United Kingdom, and Europe. Stakeholders interviewed included wool growers, producer groups, processors, certification bodies, industry organisations, and global brands. Across these markets and stakeholder groups, three themes emerged consistently as critical drivers of value capture: internationally recognised accreditation and certification; robust, credible data; and intentionally designed value chains.

The first theme examines the role of international, independent certification and accreditation in enabling market access and price differentiation. The research found that in many value-driven markets, certification is no longer viewed as an optional premium feature, but as a prerequisite for participation, (Textile Exchange, 2024; S. Diener, personal communication, August 12, 2025). Internationally recognised, third-party schemes were consistently preferred over domestically focused or producer-led programmes, particularly where buyers face increasing regulatory, reputational, and reporting pressures. Where certification aligned with market expectations and was supported by credible verification, it

enabled inclusion in preferred supplier programmes and, in some cases, delivered measurable price premiums, (J. Carver, personal communication, August 8, 2025; R. Exterkate, personal communication, December 10, 2025; H. Moore, personal communication, December 23, 2025). Conversely, poorly recognised or fragmented schemes were found to add cost without delivering commensurate commercial return. These findings suggest that certification functions most effectively as enabling infrastructure when it is market-aligned, credible, and independently governed.

The second theme explores the commercial role of robust data as a value creation tool. Across markets, data has become a baseline requirement for procurement, influencing whether fibres are considered for sourcing at all. Interviewees highlighted growing reliance on quantified environmental metrics, particularly in relation to emissions, traceability, and supply-chain transparency. Where data was incomplete, inconsistent, or poorly contextualised, wool risked being undervalued relative to alternative fibres. In contrast, robust, independently verified data improved buyer confidence, supported favourable fibre comparisons, and strengthened the case for wool within sustainability-led product portfolios. Importantly, the research also identified that high-quality data could unlock value beyond fibre price alone, enabling longer-term contracts, preferred supplier status, and participation in emerging revenue mechanisms linked to environmental performance.

The third theme focuses on the role of intentionally designed value chains in retaining value at the farm gate. The research found that higher returns were not simply associated with shorter supply chains, but with systems deliberately structured around transparency, traceability, and aligned incentives. Designed value chains were characterised by clearer information flows, long-term commercial relationships, and reduced exposure to price volatility. International case studies demonstrated that when wool is treated as a strategic input rather than a commodity, a greater share of total value can be retained by growers. These models also delivered broader benefits, including reduced transaction costs, improved planning certainty, and increased resilience across the supply chain.

The findings of this report suggest that the future profitability of New Zealand strong wool is less dependent on increasing volumes or reducing costs, and more dependent on how effectively the sector aligns with market expectations around assurance, data, and value-chain design. Certification enables access, data substantiates claims, and designed value chains translate market demand into durable returns at farm level.

This report concludes by synthesising these insights and considering their implications for the New Zealand strong wool sector. While the findings are qualitative in nature, the consistency of signals across international markets provides confidence in their relevance. The report is intended to inform growers, industry leaders, and policymakers seeking practical, market-led pathways to strengthen the commercial performance and long-term viability of strong wool in New Zealand.

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Foreword

Strong wool has long been a defining feature of New Zealand's farming landscape, shaping land use, rural communities, and agricultural identity. Yet for many growers, the economic contribution of strong wool has steadily diminished, shifting from a valued co-product to a source of frustration and financial loss. This reality sits uneasily alongside growing global interest in natural, renewable fibres and rising expectations around sustainability, traceability, and transparency in supply chains.

This report was undertaken as part of my Nuffield Scholarship with the intention of stepping outside the New Zealand context and examining how international markets assess value in wool. Rather than beginning with the question of what producers should change on-farm, the research starts with the market: how buyers make decisions, what signals they trust, and what they are willing to pay for. In doing so, it seeks to better understand why the attributes of strong wool are not consistently translating into improved returns for growers.

Through international travel, interviews, and case studies across the United States, the United Kingdom, and Europe, I was struck by the consistency of market signals. Across geographies and stakeholder groups, the same themes emerged repeatedly: the importance of credible, internationally recognised certification; the growing commercial role of robust, verified data; and the value of supply chains deliberately designed to retain value rather than default to commodity outcomes. The consistency of these signals increased my confidence that these were not isolated examples, but structural shifts.

This report does not claim to provide a single solution to the challenges facing the strong wool sector. Instead, it aims to contribute a market-led perspective that complements existing production-focused discussions. The insights presented are intended to support informed decision-making by growers, industry organisations, and policymakers who are navigating an increasingly complex and demanding global market environment.

I am grateful to the many individuals and organisations who generously shared their time, experience, and insights throughout this research. I would also like to acknowledge the support of Nuffield New Zealand and my investing partners, whose commitment to leadership and global learning made this work possible. It is my hope that this report contributes to a more confident, informed, and commercially resilient future for New Zealand strong wool.

Acknowledgements

This report represents the collective contribution of many individuals and organisations, and I am grateful for the support, generosity, and insight shared throughout my Scholarship journey.

First and foremost, I would like to thank Nuffield New Zealand for the opportunity to undertake this scholarship and for its continued commitment to developing globally informed leadership within the food and fibre sector. The structure, challenge, and encouragement provided through the Nuffield programme created the space to step back from day-to-day industry pressures and engage deeply with international perspectives.

I am sincerely grateful to my Investing Partners, particularly NZRLT Partners, whose support made this research possible. Their investment in leadership and learning is a tangible contribution to the future of New Zealand agriculture, and I am appreciative of the confidence they placed in this work.

I would also like to acknowledge the wider international Nuffield network, whose generosity and openness are a defining strength of the programme. The willingness of Nuffield alumni around the world to share experience, challenge thinking, and open doors was instrumental in shaping both the direction and depth of this research. The strength of the Nuffield alumni community — across countries, sectors, and generations — provided not only access to insight, but a sense of shared purpose and global perspective that greatly enriched this work.

Special thanks go to my 2025 Nuffield Scholar cohort, whose diversity of backgrounds, countries, and disciplines brought constant challenge, support, and inspiration. Learning alongside scholars from around the world reinforced the value of cross-sector and cross-cultural perspectives, and many of the ideas explored in this report were sharpened through conversations, debate, and shared experiences within the cohort.

This research would not have been possible without the many growers, brands, processors, certification bodies, and industry organisations who generously shared their time and expertise across the United States, the United Kingdom, and Europe. I am deeply thankful to all interview participants for their openness, candour, and willingness to engage in thoughtful discussion. Many of these conversations challenged assumptions and strengthened the insights presented in this report. While not all contributors are named, their perspectives are central to the findings and conclusions.

I would also like to acknowledge the individuals and organisations who facilitated introductions, hosted visits, and supported logistics during international travel. Their willingness to open networks, share local context, and provide practical support significantly enhanced the quality and reach of the research.

Special thanks go to colleagues and industry peers in New Zealand who provided ongoing encouragement, constructive feedback, and robust debate throughout the development of this report. Their willingness to test ideas and challenge thinking helped ensure the research remained grounded in practical relevance for the strong wool sector.

Finally, I would like to thank my family and close supporters for their patience, encouragement, and understanding throughout this process. Balancing the demands of international research, professional responsibilities, and report writing would not have been possible without their unwavering support.

Objectives

Specifically, the objectives of this study were to:

- Determine how internationally recognised accreditation and certification schemes influence buyer confidence, market access, and price premiums for strong wool in global markets.
- Evaluate the commercial role of robust, credible data in creating, capturing, and retaining value for strong wool, including its influence on procurement decisions, regulatory compliance, and emerging revenue opportunities.
- Explore how intentionally designed value chains, characterised by transparency, traceability, and collaboration, enable greater retention of value at the farm gate compared with traditional commodity-based supply chains.
- Identify practical lessons from international case studies that could inform future pathways for the New Zealand strong wool sector.

These objectives form the framework for the report and guide the structure and analysis presented in the following chapters.

Introduction

New Zealand's strong wool sector produces one of the world's most natural, renewable, and versatile fibres. Strong wool is synonymous with sheep farming systems and plays a significant role in land use across extensive hill-country environments. Despite these strengths, many New Zealand strong wool growers currently face sustained profitability challenges, with farm-gate returns frequently failing to cover the costs of harvesting and production, (Beef + Lamb New Zealand, 2025). This has resulted in growing concern about the long-term viability of strong wool enterprises and the future role of wool within New Zealand's farming systems.

It is important to acknowledge that, at the time of writing, recent wool market reports indicate crossbred strong wool trading in the range of NZD $5.50–$6.50 per kilogram clean, broadly aligning with average shearing cost estimates (PGG Wrightson Wool, 2026; Beef + Lamb New Zealand, 2025). While this shift provides immediate relief for some growers, historical price volatility suggests that cyclical recovery alone does not address the underlying structural vulnerability of commodity-based pricing. This report therefore focuses on durable mechanisms capable of delivering margin resilience across market cycles.

New Zealand's national sheep flock has declined steadily over recent decades. Statistics New Zealand data shows 23.6 million sheep as at June 2024 — approximately 21 percent fewer than a decade earlier and part of a longer-term structural contraction from historically higher levels (Stats NZ, 2025). This decline reflects broader shifts in land use and agricultural economics, with dairy, beef and forestry expanding relative to sheep production. The ratio of

sheep to people has similarly reduced, from approximately 22 sheep per person in the early 1980s to around 4.5 in 2024 (Schwanecke, 2025).Strong wool has historically been traded as a commodity fibre, with pricing determined largely by global supply and demand rather than differentiated attributes or verified performance. Yet this commodity framing sits in tension with rising international demand for natural, renewable and responsibly sourced materials, (Textile Exchange, 2024). Despite growing sustainability narratives, improved farm-gate returns have not consistently followed. This suggests the challenge is not one of inherent fibre value, but of structural value capture. The critical question therefore becomes: how can stronger commercial value be created, captured and retained from strong wool, rather than relying on increased volume or cost reduction alone?

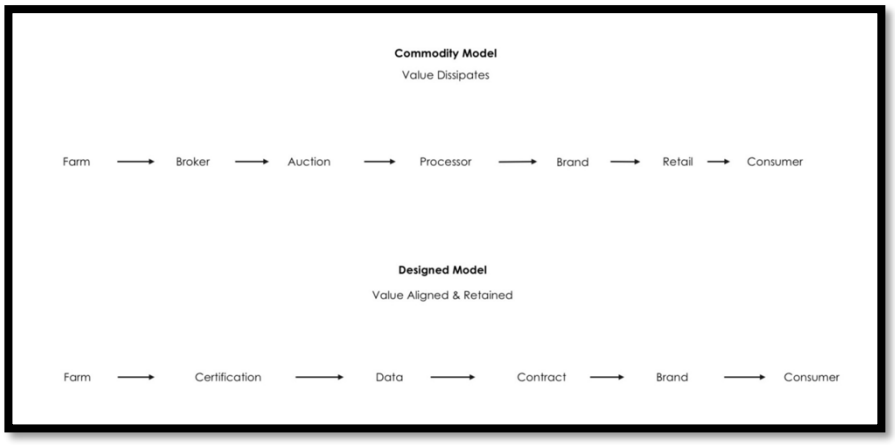


Figure 1. ***Commodity vs Designed Value Chain Comparison.***
Source: Author's own synthesis.

International markets increasingly reward fibres that align with clearly defined customer and brand values, particularly in relation to sustainability, traceability, and transparency. Global brands are under growing pressure from regulators, investors, and consumers to substantiate environmental and social claims through credible data and independently verified standards, (European Commission, n.d.-a; European Commission, n.d.-b; Greenhouse Gas Protocol, n.d.). Procurement decisions have stricter criteria, with market access dependent on the ability to demonstrate compliance, integrity, and consistency across the supply chain.

This research is positioned within that market context. Rather than focusing on production efficiency or on-farm practice change alone, the study examines how value is created, captured, and retained along the strong wool value chain. It seeks to understand how international buyers assess value, what they are willing to pay for, and how those signals can be translated back to the farm gate in a way that improves grower profitability.

Through international qualitative research, three structural mechanisms consistently determined value capture. These form the central focus of this report: the role of internationally recognised accreditation and certification in building trust and enabling price premiums; the commercial importance of robust, credible data in influencing procurement decisions and market access; and the value of intentionally designed value chains that retain a greater share of returns at farm level.

By examining these themes through interviews, secondary research, and international case studies, this report aims to identify practical, market-led pathways that could support a more profitable and resilient future for New Zealand strong wool producers. The findings are

intended to inform industry stakeholders, policymakers, and growers seeking to better align New Zealand's strong wool offering with the expectations and requirements of global markets.

Methodology/Research Approach

This research adopted a qualitative, exploratory approach to examine how greater value can be captured and retained within the New Zealand strong wool sector. The study focused on understanding how international markets assess value, make procurement decisions, and reward attributes associated with strong wool, with the aim of identifying commercially relevant insights for New Zealand producers.

Primary research was conducted through international travel and in-depth, semi-structured interviews across key strong wool markets. Interviews were undertaken with a range of stakeholders, including wool growers, producer groups, processors, certification bodies, industry organisations, and global brands operating in the United States, the United Kingdom, and Europe. These markets were selected due to their scale, maturity, and influence on global standards relating to sustainability, traceability, and fibre sourcing.

Interviews were designed to explore perceptions of value, willingness to pay, and the role of certification, data, and supply-chain design in purchasing decisions. A semi-structured format was used to allow consistency across interviews while enabling participants to share insights based on their specific role within the value chain. Interview data were recorded and transcribed to ensure accuracy and consistency of analysis.

Secondary research was undertaken to support and contextualise the primary findings. This included a review of industry reports, academic literature, life-cycle assessments, certification standards, and publicly available data relating to wool production, sustainability metrics, and fibre markets. Secondary sources were used to validate interview insights and provide broader industry context.

Data analysis followed a thematic approach. Interview transcripts and secondary material were reviewed and coded to identify recurring themes, patterns, and points of alignment across markets and stakeholder groups. Through this process, three core insights emerged consistently across interviews and regions: the role of internationally recognised accreditation and certification, the commercial value of robust and credible data, and the importance of intentionally designed value chains.

To illustrate how these insights are being applied in practice, selected international case studies were developed. Case studies were chosen based on their relevance to strong wool production, transparency of outcomes, and demonstrated ability to capture and retain

value. Each case study was structured using a consistent framework to enable comparison and highlight practical implications for the New Zealand context.

While qualitative in nature, the consistency of insights across markets and stakeholder groups suggests these findings reflect structural market shifts rather than isolated opinion. Together, the research methods employed aimed to balance market-led insight with practical relevance for the New Zealand strong wool sector.

Chapter 1: International, Independent Certification & Accreditation Adding Value

1.1 Context

Internationally recognised accreditation and certification emerged repeatedly throughout this research as a central mechanism influencing how value is created and retained within global wool supply chains. Across interviews with growers, brands, processors, industry bodies, and regulators in the United States and Europe, certification was consistently described not as a discretionary sustainability add-on, but as foundational commercial infrastructure.

Interview participants emphasised that buyers are operating in an environment of increasing regulatory scrutiny, consumer expectations, and investor pressure. In Europe particularly, regulatory frameworks such as the EU Product Environmental Footprint (PEF) are reshaping how fibres are compared and assessed, (European Commission, n.d.-a). As Dalena White, Secretary General of the International Wool Textile Organisation, observed, PEF "is the methodology that's used to then decide what is good and what is not", (D. White, personal communication, September 19, 2025), with implications for what retailers are willing to place on shelves. In this environment, recognised accreditation provides buyers with assurance that claims are independently verified and defensible.

However, the insight drawn from interviews went further than compliance. Certification was repeatedly described as a gatekeeping mechanism that determines eligibility to participate in higher-value markets. Without recognised accreditation, fibre quality and provenance alone are often insufficient to progress through procurement processes, (Textile Exchange, 2024).

The case studies examined in this chapter reinforce that finding across multiple sectors. At Keraplast, regenerative verification underpins a five-year supply contract with escalating premiums, (R. Moore, personal communication, December 23, 2025). At Exterkate Biologische Varkens, organic certification forms the foundation of a closed-chain, cost-based pricing model, (R. Exterkate, personal communication, December 10, 2025). At LOF, Responsible Wool Standard (RWS) accreditation strengthens premium positioning in design-led interior markets (S.Poelman, personal communication, February 23, 2026).

Across biotechnology, food production, and interior design, accreditation functions not merely as a marketing signal, but as enabling infrastructure upon which structured commercial relationships are built. Where certification is recognised, trusted, and aligned with market expectations, it creates the conditions under which premium pricing, long-term contracting, and risk-sharing mechanisms can operate.

For New Zealand strong wool producers, this reframes certification from a compliance cost to strategic infrastructure. Certification alone does not generate margin. Certification that is market-aligned, independently verified, and embedded within designed value chains can.

1.2 Evidence

1.2.1 Certification as a prerequisite for market access

Across international interviews, certification was consistently described as the first filter in procurement decisions. Brands and processors indicated that accreditation determines whether wool can even be considered for sourcing before discussions of specification or price occur. In this sense, certification functions as a prerequisite for market access.

This dynamic was particularly evident in Europe, where increasing regulatory oversight and sustainability reporting requirements mean that buyers must substantiate claims with recognised third-party standards. As Dalena White, Secretary General at the International Wool Textiles Organisation noted, retailers are unlikely to stock products unless they can confidently support environmental claims, (D. White, personal communication, September 19, 2025). Recognised global standards such as the Responsible Wool Standard (RWS) were repeatedly referenced as baseline expectations, particularly for European markets, (Textile Exchange, 2024).

Jeanne Carver of Shaniko Wool Company reinforced this view, stating that third-party certification is "becoming your entry even to sell." Accreditation is no longer an optional premium feature — it is the "ticket to the table."(J. Carver, personal communication, August 8, 2025).

The case studies illustrate how this prerequisite status translates into commercial reality.

At Keraplast, regenerative verification was essential to securing industrial ingredient customers seeking low-carbon, traceable protein inputs. Without verified regenerative sourcing, New Zealand strong wool would compete directly with lower-cost feather-derived keratin in commodity ingredient markets, (R. Moore, personal communication, December 23, 2025).

At LOF, RWS accreditation supports entry into specification-driven architectural and design markets, where sustainability credentials must withstand scrutiny from commercial clients, (S. Poelman, personal communication, February 23, 2026).

At Exterkate, organic certification is the non-negotiable foundation of the entire supply chain. Participation in the closed-chain system is contingent upon certified organic production, (R. Exterkate, personal communication, December 10, 2025).

Across these examples, certification determines eligibility. Fibre that does not meet recognised standards risks exclusion from value-driven markets before price negotiation even begins.

For strong wool producers, the implication is structural: the absence of recognised certification increasingly limits access to markets willing to pay premiums.

1.2.2 Price premiums and commercial signals associated with accreditation

While certification enables access, interviews also revealed that accreditation plays a role in enabling price differentiation — but only under specific conditions.

Brands described certification as providing the internal justification required to pay more for wool. Where premiums must be defended to procurement committees, boards, or consumers, third-party accreditation strengthens the commercial case. Interviewees referenced premiums of up to NZD $2 per kilogram for accredited wool when certification aligned with buyer values and traceability expectations, (R. Moore, personal communication, December 23, 2025).

The case studies deepen this finding by demonstrating how accreditation translates into structured financial outcomes.

At Keraplast, regeneratively verified growers receive a super-premium price under a five-year contract, beginning at approximately 25 percent above prevailing market rates and escalating annually. Chief Executive Howard Moore articulated an explicit premium-sharing philosophy: “We… feel it as an obligation… to share in the value that we are adding to wool.”, (R. Moore, personal communication, December 23, 2025).

At Exterkate, organic certification underpins a cost-based pricing model recalibrated quarterly with independent accounting input. Certification created a differentiated product category; structured governance ensured that margin was retained at farm level, (R. Exterkate, personal communication, December 10, 2025).

At LOF, accreditation strengthens brand credibility and supports premium finished-product pricing. The margin generated at carpet and rug level enables payment of fair and sustainable wool prices beyond commodity auction outcomes, (S. Poelman, personal communication, February 23, 2026).

These examples illustrate three premium mechanisms enabled by accreditation:

1. Direct fibre premium (contract-based uplift).
2. Structured cost-plus pricing governance.
3. Downstream margin translation into farm-level value.

Certification does not automatically create premiums. Rather, it creates the commercial permission to pay more. Margin is realised when accreditation is embedded within contracts, governance structures, or product-led brand strategies.

1.2.3 Credibility, independence, and trust in certification schemes

A consistent theme across interviews was the importance of independence and credibility in determining whether certification delivers commercial value.

Craig Smith of Devold emphasised that independence is critical to maintaining trust, noting that schemes perceived as self-declared or poorly governed risk becoming box-ticking exercises, (C. Smith, personal communication, February 28, 2025). Brands similarly stressed that independent verification reduces reputational risk in an environment of heightened scrutiny, (L. Sansone, personal communication, August 2, 2025).

Interviewees drew a clear distinction between internationally recognised, third-party standards and fragmented or domestically focused schemes that lack global recognition, (C. Smith, personal communication, February 28, 2025; D. White, personal communication, September 19, 2025). Where certification is widely understood and embedded within established textile frameworks, buyers are more confident in relying on it for procurement and pricing decisions.

The case studies reinforce this distinction.

Keraplast's regenerative claims are supported by independent auditing and formalised contracts, (R. Moore, personal communication, December 23, 2025).

Exterkate's organic chain is reinforced by accountant-verified cost modelling and collective governance, (R. Exterkate, personal communication, December 10, 2025).

LOF relies on internationally recognised standards such as RWS to substantiate brand claims, (S. Poelman, personal communication, February 23, 2026).

In each case, credibility reduces buyer risk. Reduced risk increases willingness to engage in long-term contracts and premium pricing arrangements.

Trust is therefore not abstract. It is operationalised through independent verification and governance. When certification is trusted, it lowers friction in procurement and strengthens commercial relationships. When it lacks credibility, it risks adding cost without delivering financial return.

1.2.4 Market pull versus producer-led certification approaches

Across interviews, brands and intermediaries emphasised the importance of market alignment. Certification is most commercially effective when driven by downstream demand rather than producer aspiration.

Laura Sansone of Fibershed described how practice-based verification systems translate regenerative effort into measurable, trusted outcomes that buyers can rely on. The presence of transaction certificates that follow fibre through the value chain protects integrity and supports premium positioning, (L. Sansone, personal communication, August 2, 2025).

However, interviewees cautioned against proliferation of schemes that lack international recognition or downstream relevance. Accreditation developed without clear buyer demand risks becoming a compliance burden rather than a margin driver.

The case studies illustrate the principle of market pull.

Keraplast's regenerative sourcing aligns with industrial customers actively seeking lower-carbon protein inputs, (R. Moore, personal communication, December 23, 2025).

Exterkate's organic chain responds to sustained European consumer demand for certified organic meat, (R. Exterkate, personal communication, December 10, 2025).

LOF's accreditation strategy aligns with expectations within professional design and architectural markets, (S. Poelman, personal communication, February 23, 2026).

In each case, certification was adopted or structured in response to explicit downstream signals.

This suggests a sequencing principle for strong wool:

1. Identify markets willing to pay.
2. Determine which accreditation frameworks those markets recognise.
3. Align production systems to those recognised standards.
4. Embed certification within structured commercial arrangements.

When this sequence is reversed — when certification precedes validated demand — margin capture becomes uncertain.

For New Zealand strong wool, certification strategy should therefore be market-informed and selective. Accreditation is most powerful when it satisfies an existing willingness to pay and is embedded within designed value chains capable of translating that demand into durable farm-gate returns.

1.2.5 Case Study 1: Keraplast Limited

Keraplast

Company Overview

Keraplast Limited is a Christchurch-based biotechnology company specialising in the extraction and refinement of keratin protein from New Zealand strong wool. Its keratin ingredients are supplied into global personal care, nutraceutical and medical device markets, where they are used in haircare, skincare and wound healing applications.

Unlike textile exporters, Keraplast operates in high-value industrial ingredient markets, supplying predominantly international customers seeking functional, scientifically validated and sustainability-aligned raw materials. For medical device markets, Keraplast manufactures FDA approved products that are branded and sold to a US partner who has marketing rights for the products.

In 2025, Keraplast entered a five-year supply agreement with Wools of New Zealand to secure hundreds of tonnes of regeneratively farmed strong wool annually, linking New Zealand growers directly to advanced global manufacturing applications.

Country: New Zealand
Industry: Biotechnology (keratin extraction and functional protein ingredients)

The Challenge

Keraplast operates in markets traditionally dominated by lower-cost keratin derived from chicken feathers. These products are often positioned as commodity ingredients, competing primarily on price rather than sustainability, traceability or verified functionality.

To differentiate from feather-based alternatives, Keraplast needed to demonstrate both environmental credibility and scientific superiority. In parallel, the nutraceutical sector — another major growth market — requires rigorous clinical validation and strict regulatory compliance, limiting the claims companies can make and increasing research costs.

For strong wool growers, the broader challenge mirrored that of many commodity sectors: declining sheep numbers, volatile pricing, and limited differentiation in traditional textile markets. Without alternative end uses, growers remained exposed to cyclical demand and price pressure.

Business Model & Differentiation

Keraplast differentiates itself through three integrated strategies: regenerative sourcing, scientific validation, and premium end-market positioning.

First, the company sources wool exclusively from regeneratively farmed sheep operations. These farms focus on improving soil health, waterways and animal welfare, with practices independently audited. By aligning wool supply with regenerative principles, Keraplast strengthens its sustainability narrative and provides measurable carbon-reduction assurances to industrial customers.

Second, Keraplast invests heavily in research and development. Its keratin ingredients are supported by clinical, safety and functionality data, enabling scientifically defensible claims in global personal care and health markets. This positions its products above commodity feather-derived keratin, both in performance and price.

Third, Keraplast has embedded premium sharing into its supply contracts. Under the five-year agreement facilitated through Wools of New Zealand, regeneratively certified growers receive a super-premium wool price. In 2026 this equates to 25 percent above market — approximately $1.38 per kilogram above prevailing rates — at $6.88 per kilogram clean, with the contract premium increasing annually to $2.50 per kilogram by year 5.

As Chief Executive Howard Moore stated: “We really do want to encourage the supply of regeneratively farmed wool, but we also do feel it as an obligation from the company to share in the value that we are adding to wool, sharing that with our farmer suppliers.”

The company’s strategy is framed around a “net positive” philosophy — creating more positive environmental, social and economic impact than negative — and this positioning resonates strongly with its international industrial customers, many of whom are actively seeking lower-carbon footprint raw materials.

Outcomes & Impact

The contract creates a direct commercial link between regenerative farm practice and high-value biotechnology applications, moving wool beyond traditional textile markets into advanced ingredient supply chains.

For growers, the impact is immediate and measurable:

- 40 percent premium above market pricing in 2025.
- Contracted price increases of $0.50 per kilogram annually.
- Multi-year demand certainty under a five-year agreement.

For Keraplast, secure access to low-carbon footprint New Zealand strong wool strengthens its sustainability credentials in export markets, particularly in North America and Europe, where customers increasingly scrutinise carbon footprint and supply chain traceability.

At a processing level, the company's new Hornby facility is scaling toward processing up to 100 tonnes of wool per year. Through biochemical extraction and refinement, Keraplast adds hundreds of dollars per kilogram of value to raw wool, multiplying the economic contribution of the original fibre within the local economy.

This model demonstrates that when strong wool is positioned as a high-performance protein input — rather than a textile fibre — the value capture potential increases exponentially.

Relevance to Insight

Keraplast illustrates how accreditation and regenerative verification can unlock margin when aligned with high-value downstream markets. Certification alone does not generate return; it

becomes powerful when it satisfies the sustainability requirements of global industrial customers willing to pay for measurable environmental performance.

Key transferable elements include:

- Formalised regenerative auditing linked directly to contracts.
- Multi-year supply agreements with scheduled price increases.
- Explicit premium-sharing mechanisms between processor and grower.
- Positioning strong wool in non-textile, science-based markets.

For New Zealand's strong wool sector, the lesson is clear: accreditation becomes margin-generating when it enables access to differentiated end markets and when processors commit to sharing downstream value.

Rather than competing in oversupplied textile markets, Keraplast demonstrates how verified regenerative wool can underpin premium industrial applications. When environmental integrity is embedded in contracts and supported by scientific validation, accreditation shifts from a compliance exercise to a commercial lever — directly lifting farm-gate returns while expanding global demand for strong wool.

This case study authorised by Roger Moore of Keraplast

1.2.6 Case Study 2: Exterkate Biologische Varkens

Company Overview

Exterkate Biologische Varkens operates as a vertically integrated organic pork supply chain within the Netherlands, supplying certified organic meat across European markets. The business works with approximately 120 organic pig farms in a closed-chain model, meaning all animals born within the system remain within it until processing and sale.

The company forms part of a larger food group but maintains a dedicated organic and high–animal-welfare positioning. It combines certification, structured governance, and transparent cost-based pricing to ensure farmer viability within a premium market segment.

Country: The Netherlands
Industry: Agriculture (organic livestock production), Food processing and distribution

The Challenge

The organic pork sector experienced early instability driven by policy-led expansion without corresponding consumer demand. Rapid farm conversion to organic production created oversupply, leading to financial stress and market imbalance.

At the same time, organic farmers faced significant capital barriers. Conversion required substantial investment — often around €1 million per farm — making reversion to conventional systems nearly impossible if market conditions deteriorated. This created high financial exposure for producers.

Competition from conventional processors further increased volatility. Downstream buyers frequently attempted to secure supply by offering marginally higher prices, undermining long-term relationships and destabilising coordinated supply chains.

Without structured agreements and transparent pricing, organic producers remained exposed to the same cyclical risks as commodity markets — despite carrying higher production costs.

Business Model & Differentiation

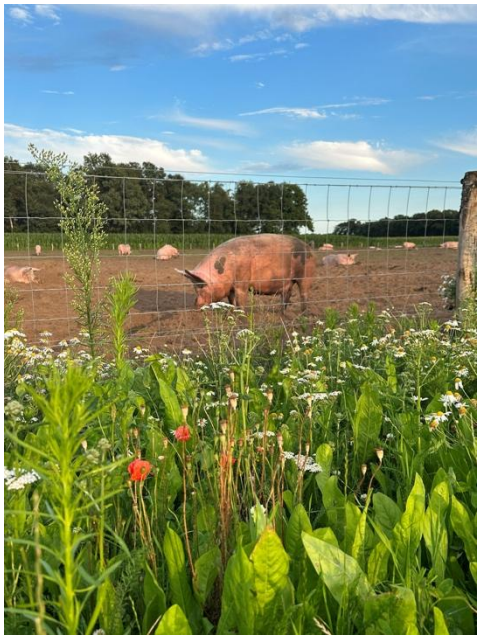
Exterkate responded by developing a strictly governed closed-chain model. All pigs born within the system are processed and sold within the system. No animals are bought from or sold to external parties. This preserves certification integrity, supply consistency, and collective leverage.

Trust is reinforced through transparency. Pricing is based on a cost-price model developed alongside independent accountants. The model is updated quarterly, with feed price acting as the primary variable. Adjustments are negotiated every three months, ensuring pricing reflects real production costs while remaining responsive to market demand.

Farmers are formally organised into a suppliers' union with a Market Committee. This committee negotiates pricing with the processor each quarter, incorporating both farm-level cost data and downstream market signals. The governance structure ensures that farmers participate directly in price formation rather than passively accepting processor-led terms. The system is designed around viability rather than short-term margin extraction. As one farmer described:

"Whatever the situation the market is, they buy the animals, and that's a fairly relaxing situation."

This collective governance structure reduces opportunistic behaviour, aligns incentives across the chain, and embeds certification within a commercially disciplined framework.



Outcomes & Impact

Farmers within the chain gain predictability and financial planning certainty. Quarterly pricing updates allow producers to anticipate revenue and manage cash flow with greater confidence.

The closed-chain commitment guarantees off-take, reducing the stress associated with volatile spot markets. During downturns, the company absorbs variability through geographic market diversification and cold storage buffering, smoothing supply-demand fluctuations across Europe.

The result is sustained farmer participation and reduced exit rates in a sector historically prone to contraction. Certification alone did not deliver stability — but certification combined with transparent cost modelling and collective governance did.

Relevance to Insight

Exterkate demonstrates that accreditation (organic and high–animal-welfare certification) can generate margin only when paired with structured price governance and supply discipline. Certification created the premium positioning, but the accountant-backed cost model and collective negotiation secured the margin at farm level.

Key financial mechanisms include:

- Quarterly cost-based price recalibration.
- Collective supplier representation in negotiations.
- Closed-chain supply integrity.
- Guaranteed off-take regardless of market cycle.

For New Zealand's strong wool sector, the transferable lesson is clear: certification must sit within a governed commercial structure. Without transparent cost modelling and aggregated negotiation power, accreditation risks becoming a compliance burden rather than a margin tool.

When certification is combined with supply-chain discipline, collective governance, and regular cost-based price setting, it becomes a mechanism for stabilising and lifting farm-gate returns — rather than exposing producers to premium-market volatility.

This case study authorised by Ruben Exterkate of Exterkate Biologische Varkens

1.2.7 Case Study 3: Lof

Company Overview

LOF is a New Zealand-owned textile design studio specialising in designing premium lighting products made from strong wool. The business operates with a vertically coordinated supply chain model that links accredited New Zealand farms to high-end residential and commercial interiors.

LOF positions wool not as a commodity fibre but as a design-led, architectural product, integrating sustainability credentials and traceability into its brand identity. The company pays a premium for accredited New Zealand wool and markets that provenance story directly to designers and consumers.

Country: New Zealand
Industry: Interior Design, Wool Light Fittings

The Challenge

New Zealand strong wool has faced sustained price pressure due to competition from synthetic fibres and a global shift away from natural materials.

At the farm level, strong wool returns have frequently failed to cover shearing costs, leading to structural decline in the sector.

The central challenge LOF addresses is:

How can strong wool move from a low-value commodity fibre to a premium, design-led interior product — and in doing so, return margin to growers?

Business Model & Differentiation

LOF's model combines accreditation, traceability and product design to reposition strong wool in the marketplace.

Key features include:

1. Accredited Fibre Sourcing

   LOF sources wool from New Zealand farms operating under recognised assurance and traceability systems, including Responsible Wool Standard (RWS). This provides third-party verification of animal welfare and environmental stewardship.

2. Direct Supply Relationships

   The business promotes transparent sourcing and long-term relationships with growers, reducing layers between farm and finished product.

3. Design-Led Market Positioning

   Rather than competing on price, LOF positions its products as premium interior design elements, sold through architects, designers, direct to consumer, retailers, and specification channels.

4. Margin Capture at Product Level

   By controlling branding, design and market access, LOF captures more downstream value than raw fibre sales would allow.

The premium paid for accredited wool is supported by margin created at the finished product stage, rather than relying solely on commodity auction premiums.

Outcomes & Impact

LOF demonstrates that strong wool can achieve higher market positioning when:

- It is linked to credible accreditation and traceability.
- The fibre story is integrated into product branding.
- The final product is differentiated on design, sustainability and performance rather than price alone.

While individual grower contract prices are not publicly disclosed, LOF has publicly stated its commitment to paying fair and sustainable prices for accredited wool and building supply partnerships that ensure long-term viability for growers.

The impact of this model includes:

- Reframing strong wool as a premium design material.
- Creating stable/growing demand for accredited New Zealand fibre.
- Demonstrating that design innovation can unlock value beyond commodity pricing mechanisms.

Relevance to Insight

LOF illustrates that:

- Accreditation adds commercial value when embedded in a premium product strategy.
- Strong wool margin recovery does not rely solely on auction premiums — it can be driven by brand positioning and design differentiation.
- Verified provenance strengthens marketing claims and supports premium price positioning.
- Margin captured downstream (product level) can enable fairer farm-gate pricing.

For strong wool producers, this case suggests that:

Accreditation becomes commercially powerful when paired with product innovation and

direct market engagement. Certification alone may not guarantee premium pricing — but accreditation integrated into a design-led brand can shift the value equation.

This case study authorised by Sophie Poelman of LOF

1.2.8 Summary of findings

The evidence from interviews and case studies indicates that internationally recognised accreditation and certification operate as foundational infrastructure within modern wool value chains.

Across interviews with brands, processors, growers, certification bodies and industry organisations in the United States, Europe, and here in New Zealand, certification was consistently described as a prerequisite for participation in value-driven markets, (J. Carver, personal communication, August 8, 2025; S. Diener, personal communication, August 12, 2025; R. Exterkate, personal communication, December 10, 2025; H. Moore, personal communication, December 23, 2025). In regulatory environments shaped by sustainability reporting requirements, product environmental benchmarking, and heightened scrutiny of environmental claims, recognised third-party standards function as enabling mechanisms. They reduce reputational and compliance risk for buyers and determine whether fibre is eligible for procurement consideration, (Textile Exchange, 2024).

However, the research demonstrates that certification alone does not automatically generate higher returns. Rather, accreditation performs two distinct commercial functions.

First, it enables market access. Without recognised certification, strong wool risks exclusion from premium markets before price discussions begin. Accreditation acts as the "ticket to the table," (D. White, personal communication, September 19, 2025), ensuring participation in channels where differentiation is possible.

Second, when embedded within structured commercial arrangements, certification can enable margin creation. The case studies illustrate this across multiple sectors:

- In biotechnology, regenerative verification underpins long-term supply agreements with escalating fibre premiums, (R. Moore, personal communication, December 23, 2025).
- In organic livestock systems, certification forms the basis of cost-based pricing models governed through collective negotiation, (R. Exterkate, personal communication, December 10, 2025).
- In design-led interior markets, accreditation strengthens brand credibility and supports premium finished-product positioning that translates into improved farm-level returns, (S. Poelman, personal communication, February 23, 2026).

These models demonstrate that accreditation becomes financially meaningful when paired with one or more of the following mechanisms:

- Multi-year contractual commitments
- Transparent cost modelling and pricing governance
- Direct supply relationships
- Downstream brand strategies that capture and redistribute margin
- Independent auditing and verification that reduce buyer risk

A consistent finding across interviews was the importance of credibility and independence. Internationally recognised, third-party standards carry greater commercial weight than fragmented or domestically administered schemes lacking global recognition, (Textile Exchange, 2024). Where certification is trusted, it reduces friction in procurement and increases buyer confidence. Where it is poorly aligned or weakly governed, it risks becoming a compliance cost without delivering financial return, (D. Alexander, personal communication, November 13, 2025; J. Carver, personal communication, August 8, 2025).

Equally important is the role of market pull. Accreditation is most effective when adopted in response to explicit downstream demand. Certification developed without clear buyer recognition or willingness to pay risks adding administrative burden without improving price outcomes. Across sectors, successful models followed a consistent sequence: identify markets willing to pay, align with recognised standards, embed accreditation within structured commercial arrangements, and translate differentiation into contracts, (J. Carver, personal communication, August 8, 2025; R. Exterkate, personal communication, December 10, 2025; H. Moore, personal communication, December 23, 2025).

The overarching insight is structural. Certification is not a premium feature layered onto commodity supply. It is infrastructure that enables differentiation — and when aligned with market demand and embedded within designed value chains, it can convert environmental integrity and production assurance into commercial leverage.

For New Zealand's strong wool sector, the implication is not simply to increase certification uptake. Rather, it is to ensure that accreditation is internationally recognised, independently governed, market-aligned, and integrated within commercial systems capable of translating assurance into durable farm-gate returns.

This sets the foundation for the second insight of this report: that robust, credible data strengthens and substantiates the claims that certification enables, further enhancing buyer confidence and expanding the mechanisms through which value can be created and retained.

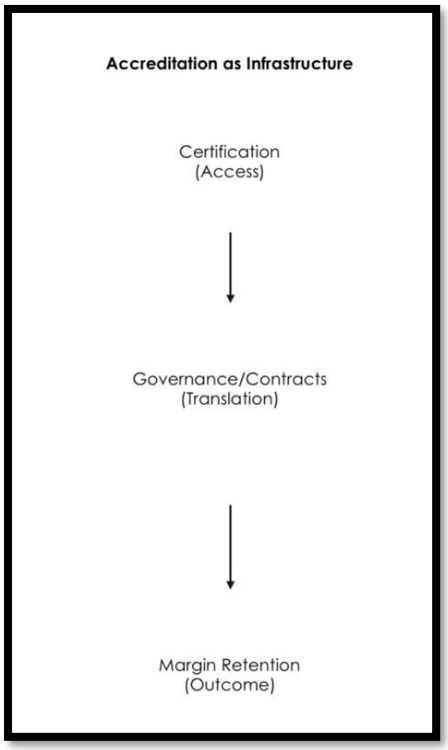


Figure 2. ***Accreditation as Infrastructure***

Source: Author's own synthesis.

1.3 Implications

The findings from this chapter carry important implications for how New Zealand's strong wool sector positions itself within global markets.

International buyers are not signalling a lack of interest in wool. Rather, they are signalling increasingly explicit requirements around assurance, verification, and credibility. In markets shaped by regulatory scrutiny, investor expectations, and sustainability reporting frameworks, internationally recognised accreditation functions as a condition of participation rather than a discretionary premium feature, (European Commission, n.d.-a; European Commission, n.d.-b).

For New Zealand, this presents both opportunity and risk.

The opportunity lies in the sector's existing strengths. New Zealand farming systems already operate under comparatively high standards of animal welfare, environmental stewardship, and traceability. Programmes such as NZFAP and other assurance frameworks provide a foundation upon which internationally recognised accreditation can be layered. Interviews suggest that where these systems are independent, transparent, and aligned with globally recognised standards, they are understood and valued by overseas buyers.

The risk lies in misalignment.

Certification that is not internationally recognised, independently governed, or demanded by downstream markets risks becoming an additional cost without delivering improved returns. The evidence suggests that proliferation of schemes without clear buyer recognition may dilute rather than strengthen New Zealand's positioning, (H. Huvenaars, personal communication, October 7, 2025; C. Smith, personal communication, February 28, 2025; Textile Exchange, 2024; D. White, personal communication, September 19, 2025).

A strategic approach to accreditation therefore requires selectivity. Rather than asking how many producers can be certified, the more commercially relevant question is:

Which markets are willing to pay, and which standards do those markets recognise?

The case studies examined in this chapter reinforce that accreditation generates margin only when embedded within structured commercial systems. Certification enabled premium contracts at Keraplast, underpinned cost-based pricing at Exterkate, and strengthened

product-level differentiation at LOF — but in each instance, accreditation was paired with contractual commitment, pricing governance, or downstream brand strategy, (R. Exterkate, personal communication, December 10, 2025; H. Moore, personal communication, December 23, 2025; S. Poelman, personal communication, February 23, 2026).

This suggests that certification uptake in isolation is unlikely to materially improve farm-gate returns. The commercial benefit arises when accreditation is integrated into:

- Long-term supply agreements
- Transparent pricing mechanisms
- Direct grower-to-brand relationships
- Designed value chains that align incentives
- Product strategies capable of capturing downstream margin

For New Zealand strong wool, this points to a coordinated pathway rather than an individual one. Aggregated supply, consistent standards, and collective governance are more likely to deliver negotiating leverage than fragmented certification adoption.

The findings also highlight the importance of credibility and independence. Internationally recognised, third-party standards reduce buyer risk and increase confidence in long-term sourcing relationships. Where trust is strengthened, buyers demonstrate greater willingness to engage in premium arrangements and multi-year contracts. Where trust is weak, price sensitivity increases.

Importantly, accreditation should not be viewed as an endpoint. It creates the conditions under which differentiation can occur, but it must be supported by credible measurement and verification. Certification signals compliance with defined standards; robust data substantiates performance and strengthens the commercial case for premium pricing. This linkage is explored further in the following chapter.

Finally, the evidence suggests that accreditation is most commercially effective when driven by market pull rather than producer aspiration. Successful models followed a consistent sequence: identify market demand, align with recognised standards, embed accreditation within structured commercial arrangements, and translate differentiation into contracts capable of delivering durable farm-gate returns.

For New Zealand's strong wool sector, the strategic implication is clear:

Internationally recognised accreditation is not optional in value-driven markets. However, its financial impact depends on how effectively it is aligned with downstream demand and integrated within designed value chains capable of converting assurance into margin.

The challenge, therefore, is not simply increasing certification uptake, but ensuring that accreditation is internationally recognised, independently governed, market-aligned, and embedded within commercial structures that retain value at the farm gate.

This chapter establishes certification as enabling infrastructure. The next insight explores how robust, credible data strengthens and substantiates the claims that certification permits, expanding the mechanisms through which value can be created and retained.

Chapter 2: Robust Data as a Value Creation Tool

2.1 Context

If certification functions as enabling infrastructure for market access, robust data functions as the evidence that substantiates and strengthens that access.

Across interviews in Europe, the United States and Australasia, data was repeatedly described not as an optional sustainability enhancement, but as a commercial prerequisite. Brands, processors and technical intermediaries consistently indicated that fibre without credible, defensible data is increasingly excluded from procurement shortlists before price discussions begin.

This shift is being driven by three forces:

- Regulatory reporting requirements (particularly in Europe), (European Commission, n.d.-a; European Commission, n.d.-b)
- Scope three emissions accounting and investor scrutiny, (Greenhouse Gas Protocol, n.d.)
- The need for defensible environmental claims in competitive fibre markets, (Textile Exchange, 2024; Wool Impact, 2025)

Kjersti Kviseth of Norwegian Fashion and Textile Agenda noted that existing Life Cycle Analysis methodologies often misrepresent natural fibres:

"It's a very challenging one because it's, it's difficult with all natural fibers in LCA… the methodology that is kind of accepted… is just like the one LCA that is there with the numbers that are so completely wrong.", (K. Kviseth, personal communication, October 21, 2025).

The implication is commercial. When methodologies are flawed or data is incomplete, wool risks being structurally undervalued relative to synthetic alternatives, (Textile Exchange, 2024; D. White, personal communication, September 19, 2025; Wool Impact, 2025).

Conversely, where data is robust, standardised and independently verified, interviewees described improved buyer confidence, stronger negotiating positions, and additional revenue streams beyond fibre price alone, (J. Carver, personal communication, August 8,

2025; L. Sansone, personal communication, August 2, 2025; Textile Exchange, 2024; D. White, personal communication, September 19; 2025; Wool Impact, 2025).

Across markets, the message was consistent:

Certification signals integrity. Data proves performance.

When both travel with the fibre, margin potential increases.

2.2 Evidence

2.2.1 Data as a prerequisite for procurement and market access

Interviewees repeatedly described data as "the entry requirement" in modern sourcing decisions.

Andre Mazetto of AgResearch emphasised the need for standardised, reusable data systems that avoid duplication and increase credibility: "You don't want to keep plugging the same data on five different places, right? So we want to make sure that data is reusable.', (A. Mazetto, personal communication, January 16, 2025).

He further stressed the importance of methodological transparency and understanding: "People say, 'Oh, you're measuring the carbon footprints.' No, actually, we are estimating.", (A. Mazetto, personal communication, January 16, 2025).

This distinction between estimation and measurement matters commercially. Buyers require confidence not only in outcomes, but in process.

David Alexander of the New Zealand Wool Testing Authority framed data as a market differentiator required by his clients: "We produce data, is what I say… Better data, better results.", (D. Alexander, personal communication, November 13, 2025).

Through rigorous testing — dual subsampling, laser scans, hyperspectral imaging, robotic colour systems — NZWTA provides repeatable, certified measures of micron, yield and processing-relevant metrics. This precision enables brokers and growers to more accurately characterise wool and negotiate improved returns.

In effect, technical testing data strengthens product specification confidence — reducing buyer risk and increasing pricing precision.

Where data is absent or weak, wool is treated generically. Where data is robust, wool becomes defined, comparable and defensible, (D. Alexander, personal communication, November 13, 2025).

2.2.2 Correcting the narrative: data, LCA's and fibre comparison

Several interviewees highlighted that wool's commercial challenge is not always performance — but measurement.

Kviseth warned that current frameworks and reporting in Europe can distort outcomes depending on scope and timing: "If you would have included biodiversity now… the results were wool would have been even worse.", (K. Kviseth, personal communication, October 21, 2025).

This reflects a structural issue: when data categories are incomplete or misweighted, natural systems can appear disadvantaged relative to synthetics, (Textile Exchange, 2024; Wool Impact, 2025).

Shaniko Wool Company addressed this directly through its six-year Shaniko Wool Carbon Initiative in partnership with Oregon State University. Rather than relying on generic LCA datasets, Shaniko generated farm-specific, peer-reviewed carbon and soil data across 2.6 million acres. The findings demonstrated net negative emissions and increasing soil carbon, (J. Carver, August 8, 2025; Research Gate, 2025).

Jeanne Carver noted that buyers are not simply purchasing fibre — they are purchasing verified impact data embedded within it.

This research has delivered:

- 10–20% wool price premiums
- Multi-year brand contracts
- Seven-figure environmental performance agreements per ranch, (J. Carver, personal communication, August 8, 2025)

The commercial shift occurred not because wool changed — but because the data attached to it changed. The lesson is structural: When wool is measured using wool-relevant methodologies, the narrative shifts.

2.2.3 Verified data as a driver of price, preference, and new revenue

Robust data does more than defend existing markets — it can create new ones.

Laura Sansone described how the Climate Beneficial™ Verification program translates regenerative practice into measurable climate outcomes: "The data is all matriculated through a carbon accounting program, through the USDA called COMET…", (L. Sansone, personal communication, August 2, 2025).

Critically, verification and transaction certificates travel with the fibre: "There are certificates of verification, and then there are transaction certificates as well that follow it all the way through that value chain.", (L. Sansone, personal communication, August 2, 2025).
This protects integrity, prevents greenwashing and allows brands to pay premiums.

Similarly, Eulindra Pastoral Company in Australia monetised soil carbon data under a regulated framework. Through formal measurement, audit and issuance of Australian Carbon Credit Units, the Dorans generated approximately A$138,000 from 3,000 ACCUs layered on top of livestock returns, (Agriprove, 2025).

Importantly, this revenue was not derived from increased production. It arose from following a deliberate flow of actions designed to achieve commercial success, (see Figure 3 below).

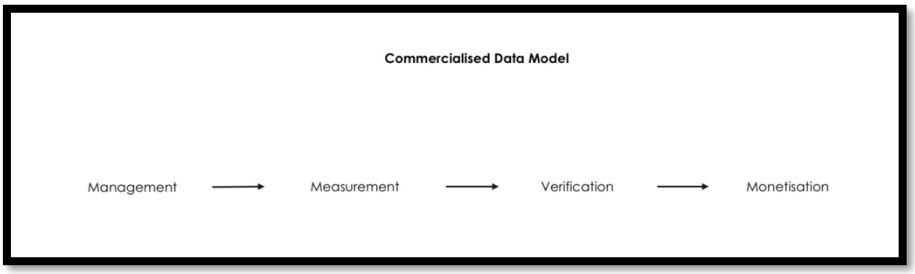


Figure 3. ***Commercialised Data Model.***
Source: Author's own synthesis.

The sheep enterprise remained intact. The data created the margin.

Across these examples, a pattern emerges:

Data that is independently verified and embedded within recognised frameworks can unlock:

- Fibre price premiums
- Long-term supply contracts
- Environmental service payments
- Carbon credit revenue

- Preferred supplier status

Without verification, data remains anecdotal. With verification, it becomes tradable, (J. Carver, personal communication, August 8, 2025; AgriProve, 2025).

2.2.4 Trust, consistency, and the cost of poor or missing data

Interviewees were equally clear about the risks of fragmented or inconsistent data.

Marion Tviland of Norilia provided a data-rich example of how grading transparency affects farmer outcomes. Norilia collects and grades approximately 75% of Norway's 3,000-tonne clip, paying according to a national standard, (M. Tviland, personal communication, September 26, 2025). Transparent quantity, grade and pricing data allows premiums for high grades and identifies loss-making segments.

She noted that many low grades currently yield zero price, and the company often "lose[s] money handling" lower-grade clips. Marion also noted the implication of subsidies in Norway that impacted the ability to encourage producers to learn from their data and create change, (M. Tviland, personal communication, September 26, 2025).

The implication is direct: Where data identifies value — margin can be protected. Where data identifies inefficiency — structural reform can occur.

Poor data - or the absence of data - obscures both.

Brands stressed that trust is built through repeatability and governance. Inconsistent methodologies undermine credibility and can halt procurement altogether.

The cost of not investing in data infrastructure may therefore exceed the cost of implementation.

In value-driven markets, weak data reduces negotiating leverage and increases price sensitivity.

2.2.5 Case study 1: Shaniko Wool Company

Company Overview

Shaniko Wool Company operates as a Farm Group for certified wool in the United States. Shaniko Wool supports the training and certification process for farms/ranches who wish to be part of the leading international wool certification standards. Shaniko Wool pays for all certification costs, purchases the wool from its farm/ranch members at a premium, and markets that wool to manufacturing and brand partners. Shaniko Wool continues the process by supporting those customers with authentic narrative (storytelling) and visual assets.

Country: United States of America
Industry: Agriculture (specifically sheep production), Textile/Fashion (raw material supplier)

The Challenge

This has been a common-sense approach in response to loss of traditional markets. Offshoring closed much of the textile manufacturing in the U.S. in the 1980s and 1990s. That trend arrived on our doorstep in 1999 when we were unable to sell the wool from our family ranch (est 1871) to our long-time customer. They closed processing and moved offshore, no longer buying wool from our region.

"In the spring of 1999, we called our long-time wool buyer to see what the price would be for our wool, and schedule delivery. Instead we heard, 'We're sorry folks, but we won't be buying wool this year. We're closing processing and moving most of our manufacturing offshore.'" Jeanne Carver

Business Model & Differentiation

Within a year, working with manufacturing partners who were still spinning, weaving and knitting wool in the U.S., Shaniko put their own wool product in the market, emphasizing the provenance of the harvest. They attached an authentic story of their heritage and leading agricultural practices to the product, and it resonated with consumers; and eventually, with large brand partners. This direct and branded approach increased the income stream of the wool significantly.

Over time Shaniko added additional value to their wool by responding to the market.

First, with third-party certifications like the Responsible Wool Standard (RWS), NATIVA Regenerative and Authentico. Within 2 years of RWS certification (2016), they established a Farm Group in 2018 (Shaniko Wool Company) to scale the amount of U.S. wool meeting these certifications, adding other family farms/ranches to the effort. This growth continues today.

Second, in response to concern about the environmental impacts of animal agriculture, Shaniko worked with nearby Oregon State University to create and implement a research study (Shaniko Wool Carbon Initiative) that would calculate the *net* ecosystem impacts of our ranching operations. Begun in 2020, they now have six years of data across 2.6 million acres (more than 1 million hectares). This research was presented at the International Rangeland Congress 2025 held in Adelaide, Australia; and was recently published in the prestigious scientific journal *Agriculture, Ecosystems and Environment*.

"We were a pioneer in attaching the provenance of wool to the product, before the term slow fashion was coined." Jeanne Carver

Outcomes & Impact

Ranches in the Farm Group receive a 10 – 20% premium for their wool (depending on wool quality).

The findings of the Shaniko Wool Carbon Initiative show their adapted management sheep grazing systems deliver food and fiber to markets with a) *NET* negative emissions totals and b) are increasing soil carbon sequestration totals.

This research is doing 2 things for Shaniko Wool Farm Group members. The data is driving increased demand and growth for our wool with fashion brand customers; and it has opened an opportunity for new and additional revenue. Their ranches are signing contracts for their

environmental deliverable – measured and verified, improved land performance. These contracts will exceed 7 figure revenue for each ranch.

Relevance to Insight

Rather than competing in commodity markets, Shaniko attached verified data to its wool and ensured that data travelled with the fibre to brand partners. RWS, NATIVA and Authentico certification provided traceability and integrity, while six years of independently verified carbon and soil data strengthened their sustainability claims.

This data translated directly into financial return:

- 10–20% wool price premiums for ranches.
- Significant additional revenue through environmental performance contracts.
- Increased brand demand driven by confidence in measurable impact.

For New Zealand's strong wool sector, the model is replicable if growers aggregate supply, standardise and independently verify environmental metrics, and ensure data is transparently shared and reflected in contracts.

The key lesson is clear: when environmental and provenance data is credible and commercialised — not treated as compliance — it becomes a margin-generating asset.

This case study authorised by Jeanne Carver of Shaniko Wool Company

2.2.6 Case study 2: Fibershed New York

Company Overview

Fibershed is a U.S.-based non-profit organisation that developed the Climate Beneficial™ Verification program — a farm-practice, place-based verification system designed to document regenerative agricultural practices and quantify climate outcomes. The program works with technical service providers to develop farm plans and measures outcomes using the USDA COMET carbon accounting tool. Verified fibre moves through the supply chain with documentation, including verification and transaction certificates.

Country: United States of America
Industry: Agriculture (sheep production), Textile/Fashion (regional fibre systems)

The Challenge

Small and regionally produced wool often struggles to compete in commodity markets due to low volumes, high processing costs, and limited brand visibility. At the same time, increasing consumer demand for climate accountability requires defensible, traceable environmental claims. Without credible verification systems, growers risk their environmental efforts being undervalued or dismissed as "greenwashing."

Business Model & Differentiation

Fibershed's Climate Beneficial™ program verifies stacked regenerative practices at farm level and translates them into measurable climate outcomes.

"The climate beneficial. It's a verification program, and it's very practice based on the farm"

Data is quantified through COMET:

“The data is all matriculated through a carbon accounting program, through the USDA called COMET…”

Certification includes both transitional and fully verified tiers, supported by transaction certificates that travel with the fibre:

“There are certificates of verification, and then there are transaction certificates as well that follow it all the way through that value chain.”

The program also integrates grant and cost-share mechanisms, lowering barriers for growers to participate.

Outcomes & Impact

Verification enables brands to make credible climate claims and justify paying premiums for verified fibre. Documented chain of custody protects integrity and allows growers to enter direct brand relationships rather than commodity channels. Funding linked to accreditation supports practice change while reducing financial risk for farmers.

Relevance to Insight

Fibershed demonstrates that when environmental practice data is independently verified, quantified, and carried through the supply chain, it becomes commercially powerful. Accreditation transforms regenerative effort into measurable value, enabling premium pricing and improved margins.

For New Zealand's strong wool sector, a similar model — combining verified farm data, carbon accounting, and transaction certificates — could elevate strong wool beyond commodity pricing, provided data is standardised, independently verified, and embedded contractually within supply agreements.

This case study authorised by Laura Sansone of Fibershed

2.2.7 Case study 3: Eulindra Pastoral Company (Agriprove)

Company Overview

Eulindra Pastoral Company, operated by David, Leonie and Harrison Doran, runs approximately 1,800 sheep and 300 Angus cattle across ~456 hectares in a high-rainfall grazing environment (~757mm mean annual rainfall).

The enterprise remains fundamentally a commercial grazing operation. However, through participation in Australia's regulated soil carbon framework, the Dorans converted measured soil data into an additional income stream alongside livestock production.

Country: Australia (NSW)
Industry: Sheep and cattle grazing (mixed livestock)

The Challenge

Like many sheep producers in temperate grazing environments, the Dorans were seeking to:

- Improve soil health and pasture productivity.
- Build financial resilience without expanding land area.
- Capture value from environmental stewardship already occurring within their grazing system.

The opportunity lay not in changing enterprise type, but in measuring what was already being improved through better grazing management.

The key question became:

Could soil carbon data be quantified, verified, and monetised without compromising the sheep enterprise?

Business Model & Differentiation

The Dorans partnered with soil carbon project developer AgriProve to register two projects under Australia's Soil Organic Carbon (Measurement and Models) Method within the Australian Carbon Credit Unit (ACCU) Scheme.

The critical shift was the formalisation of data:

- Baseline soil sampling across defined carbon estimation areas.
- Ongoing measurement and modelling of soil organic carbon stocks.
- Independent audit under a regulated government methodology.
- Issuance of Australian Carbon Credit Units (ACCUs) based on verified increases in soil carbon.

Management changes that supported measurable carbon gains included:

- Transition from set-stocking to rotational grazing (approximately five-day paddock moves).
- Investment in fencing and water infrastructure to enable controlled grazing.
- Adoption of biological soil amendments.
- Focused pasture and soil management aligned with carbon objectives.

The sheep enterprise did not cease — rather, it became the mechanism through which soil improvement occurred.

The differentiation was not simply regenerative practice — it was regulated measurement, verification and conversion of soil data into tradable units.

Outcomes & Impact

- 4,839 ACCUs were issued under Ryan Carbon Project 2 (ERF179167), as recorded on the Clean Energy Regulator register.
- 3,000 ACCUs were reportedly sold at A$46 per unit, generating approximately A$138,000 in gross revenue.
- Soil structure, water infiltration and pasture function improved alongside carbon gains.
- Carbon income was layered on top of livestock returns, improving overall farm profitability and resilience.

Importantly, the income did not arise from producing more sheep — it arose from measuring and verifying improvements in the biological capital underpinning the sheep enterprise.

Relevance to Insight

This case is not fundamentally about carbon markets.

It is about the monetisation of data.

The Doran's did not receive a premium for lamb or wool.

They received income because they:

1. Measured soil carbon using an approved methodology.
2. Verified improvements through independent audit.

3. Converted those verified gains into tradable carbon units.
4. Sold those units into an established market.

For New Zealand strong wool producers, the lesson is powerful:

- The biological system supporting sheep production holds measurable value.
- When that value is quantified using credible frameworks, it can create additional margin streams.
- The sheep enterprise becomes both a production system and an environmental asset generator.

In a strong wool context, this suggests that:

- Soil carbon data
- Biodiversity data
- Emissions intensity data
- Water quality metrics

— if structured within credible frameworks — may similarly unlock margin beyond fibre alone.

The Ryan Carbon Project demonstrates that high-rainfall grazing systems comparable to many New Zealand sheep farms can move from:

Management practice → Data capture → Verification → Monetisation

without abandoning the core sheep enterprise.

The margin was not created by producing more. It was created by measuring better.

This case study authorised by AgriProve

2.2.8 Summary of findings

Across interviews and case studies, robust data emerged as commercial infrastructure rather than compliance overhead.

The research demonstrates four core functions of data:

1. Market Access – Fibre without credible data is increasingly excluded from procurement consideration.
2. Narrative Correction – Farm-specific measurement can correct distorted fibre comparisons.
3. Margin Creation – Verified data enables premiums, contracts and environmental revenue streams.
4. Risk Reduction – Transparent, repeatable data strengthens trust and reduces volatility.

The strongest models shared consistent characteristics:

- Independent verification
- Standardised methodologies
- Data that travels with the fibre
- Contractual integration of measurement outcomes
- Governance frameworks protecting integrity

Shaniko translated peer-reviewed carbon data into price premiums and environmental contracts.

Fibershed linked practice verification to brand premiums through transaction certificates.

Eulindra monetised soil carbon within a regulated market.

NZWTA strengthened fibre characterisation through precision testing.

Norilia saw value eroded through grading transparency unable to be utilised due to constricted sales models.

In each successful case, data was commercialised — not merely collected. The structural insight is clear: Environmental and performance data becomes margin-generating when it is standardised, independently verified, and embedded within recognised commercial systems.

Without those elements, it remains a cost.

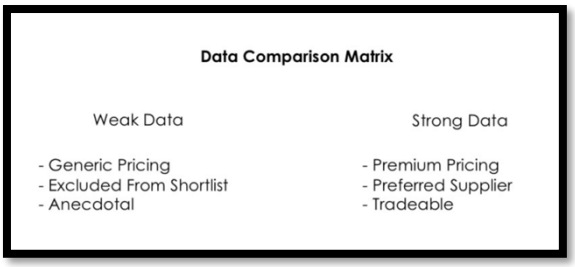


Figure 4. ***Data Comparison Matrix*****.**

Source: Author's own synthesis.

2.3 Implications

The implications for New Zealand strong wool are significant.

First, data capability is no longer optional in value-driven markets. International buyers are signalling that fibre without credible measurement will struggle to retain premium positioning.

Second, methodology matters. Generic or outdated LCA datasets risk structurally disadvantaging wool. Investment in wool-specific, peer-reviewed methodologies is critical to ensuring fair comparison within regulatory frameworks.

Third, data infrastructure should be aggregated rather than fragmented. Reusable, standardised systems reduce duplication and increase credibility — strengthening negotiating leverage at scale.

Fourth, environmental data represents potential additional revenue beyond fibre price. Soil carbon, emissions intensity, biodiversity and water metrics — when structured within credible frameworks — may unlock layered income streams.

However, sequencing is critical.

Data must be:
- Market-aligned
- Standardised
- Independently verified
- Embedded within contracts

Collecting data without commercial integration risks cost inflation without margin capture.

The evidence suggests that the commercial pathway is not:

Measure → Hope for premium.

Rather:

Identify demand → Align methodology → Verify independently → Embed in contracts → Monetise.

Finally, robust data strengthens — but does not replace — certification and value-chain design.

Certification permits participation. Data substantiates claims. Designed value chains translate proof into durable margin.

Together, these three elements form an integrated system for value capture.

For New Zealand strong wool, the strategic challenge is not whether to measure — but how to measure in ways that align with market demand and convert environmental integrity into commercial leverage.

Chapter 3: Designed Value Chains That Retain Value

3.1 Context

Across interviews conducted in the United States, Europe, and New Zealand, one consistent pattern emerged: margin was not primarily a function of fibre type, geography, or even accreditation alone. It was a function of how the value chain was designed.

This insight was not confined to export markets. While European regulatory pressure and U.S. brand dynamics amplified certain signals, several of the clearest examples of designed value chains were observed within New Zealand itself. Interviews with New Zealand manufacturers, exporters and testing authorities reinforced that value retention improves when supply chains are intentionally structured around transparency, traceability and aligned incentives.

Designed value chains were therefore not a foreign concept. They were visible both internationally and domestically — wherever commercial discipline and long-term alignment had replaced purely transactional trading models.

3.2 Evidence

3.2.1 Designed value chains versus commodity-based models

Across interviews in New Zealand, the United States and Europe, a clear distinction emerged between traditional commodity-based wool supply chains and intentionally designed value chains. Higher returns were not achieved simply by shortening the chain, but by deliberately structuring relationships, information flows and commercial arrangements around shared objectives, (T. Deane, personal communication, January 17, 2025; H. Moore, personal communication, December 23, 2025; C. Smith, personal communication, February 28, 2025).

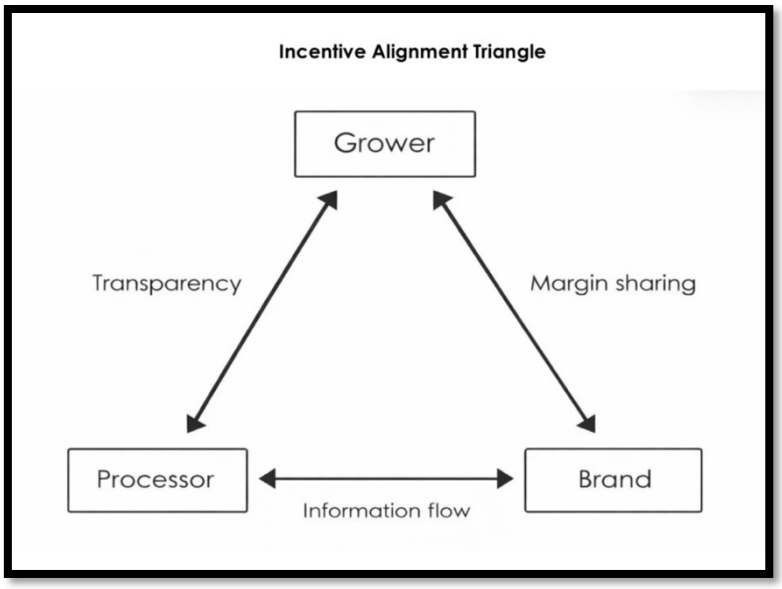


Figure 5. ***Incentive Alignment Triangle.***
Source: Author's own synthesis.

New Zealand-based interviews reinforced this point. Norsewear's supply chain redesign, LOF's direct grower engagement, and NZWTA's data infrastructure demonstrate that value-chain design is already occurring domestically. These examples illustrate that the margin challenge facing strong wool is not solely an offshore issue — it is a structural issue within how fibre moves from farm to finished product.

3.2.2 Transparency, traceability and information flow

Transparency and traceability were emphasised not only by European outdoor brands, but also by New Zealand-based operators seeking to reposition strong wool in premium markets.

Craig Smith, speaking from Devold New Zealand, described how traceability is engineered into supply systems: "I knew every single bale of wool that went in there, I knew which farm it came from.", (C. Smith, personal communication, February 28, 2025).

This level of provenance is not limited to export-driven brands. New Zealand businesses such as LOF and Norsewear similarly depend on credible sourcing narratives to support domestic and international positioning, (T. Deane, personal communication, January 17, 2025; S. Poelman, personal communication, February 23, 2026).

The lesson from both offshore and at-home interviews was consistent: Traceability is not geography-dependent. It is design dependent.

3.2.3 Alignment of incentives and long-term commercial relationships

The alignment of incentives was visible across geographies.

In New Zealand, businesses such as Norsewear have begun restructuring supply relationships to improve upstream transparency and quality alignment, (T. Deane, personal communication, January 17, 2025). LOF's design-led positioning relies on closer fibre relationships than traditional auction channels would allow, (S. Poelman, personal communication, February 23, 2026).

Internationally, Devold's multi-year contracting model demonstrated similar logic at scale. In the United States, (C. Smith, personal communication, February 28, 2025; T. Ertresvag, personal communication, September 25, 2025), Shaniko aggregated supply to secure brand-aligned contracts, (J. Carver, personal communication, August 8, 2025).

Despite differences in scale and regulatory environment, the common feature across New Zealand, U.S. and European interviews was this: Where growers were treated as long-term partners rather than interchangeable suppliers, pricing stability improved and margin retention strengthened.

3.2.4 Risk reduction, resilience, and margin retention at farm level

Designed value chains reduce volatility — and this was observed domestically as well as internationally.

New Zealand-based manufacturers described how greater visibility of fibre origin improves production planning and reduces specification mismatch. Testing and grading infrastructure within New Zealand strengthens confidence in fibre quality before export or manufacturing.

The evidence suggests that New Zealand possesses many of the structural components required for designed value chains:

- Advanced fibre testing capability
- Established grower assurance systems
- Manufacturing and product design expertise
- Export market access

The commercial question is therefore not whether designed value chains are possible in New Zealand — but how widely they are implemented.

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3.2.5 Case study 1: Norsewear

Company Overview

Founded in 1963, Norsewear is a New Zealand manufacturer of wool socks and apparel for outdoor, industrial, and lifestyle use. The company utilises both strong wool and Merino wool across its product range, designing and manufacturing products domestically with a long-standing reputation for durability, comfort, and performance.

Following a change of ownership in 2023, Norsewear undertook a comprehensive strategic reset, investing across brand, product design, manufacturing capability, and upstream wool sourcing. A central pillar of this transformation has been the redesign of its wool value chains to improve fibre quality, traceability, and value distribution to growers, while strengthening product performance and brand credibility.

While the initial value chain redesign has focused on Merino wool, the principles and commercial intent extend across Norsewear's broader wool usage, including strong wool.

Country: New Zealand
Industry: Wool textiles and apparel (Strong wool and Merino wool value chains)

The Challenge

Prior to 2023, Norsewear sourced high-quality yarn from established spinners but had limited transparency and control over wool sourcing upstream of yarn manufacture. This constrained the company's ability to verify fibre origin across both Merino and strong wool inputs, align raw wool specifications consistently with end-product performance, and directly reward growers for fibre quality and on-farm practices.

At the same time, Norsewear operated within a global apparel system characterised by high volumes of low-cost, short-life synthetic products, planned obsolescence driving excessive consumption and waste, and increasing consumer scrutiny of environmental and ethical performance.

For Norsewear, the challenge was to secure reliable supplies of fit-for-purpose wool across both strong and Merino types, while redesigning value chains to improve transparency, sustainability, and long-term supply security without undermining cost competitiveness.

Business Model and Differentiation

Under new ownership, Norsewear adopted a designed, product-led value chain approach, working backwards from garment performance to fibre specifications at farm level.

Key elements of the model include strategic partnerships with PGG Wool and the Wool Integrity NZ programme, identification of farms capable of supplying wool to defined specifications, contract-based supply arrangements with guaranteed pricing set prior to shearing, wool pricing based on estimated market value plus a 10–15% premium, increased traceability from farm through to finished yarn, and fibre specifications explicitly linked to durability, comfort, and performance outcomes.

While the redesigned supply chain has initially been implemented for Merino wool, the structure provides a template for extending specification-driven, contracted sourcing into strong wool value chains as scale and market conditions allow.

Wool is scoured in New Zealand or offshore and spun into specification yarn at offshore mills, before being returned to Norsewear's New Zealand manufacturing facility for garment production.

Outcomes and Impact

For the business, the redesigned value chain has delivered improved yarn quality, consistency, and durability, enhanced traceability supporting brand trust and market differentiation, stronger alignment between fibre inputs and product performance, and competitive advantage in institutional and performance-critical markets.

Norsewear recently secured a New Zealand Defence Force supply contract following extensive field testing, winning on product performance against international competitors. While design and manufacturing capability were critical, Norsewear attributes part of this success to improved yarn quality enabled by its redesigned wool supply chain.

For growers, participating suppliers benefit from guaranteed pricing and reduced exposure to market volatility, premium payments for wool that meets defined specifications, faster payment timelines following shearing, and clearer signals linking fibre quality to downstream value creation.

Value Chain Economics

The redesigned model introduces additional working capital requirements and longer planning horizons. These costs are partially offset by efficiency gains including reduced agent and broker costs through direct contracting, freight efficiencies through full-container shipping, improved scouring yields and spinning efficiency from higher-quality wool, and enhanced negotiating positions with spinners due to fibre consistency.

Norsewear's long-term objective is to build sufficient scale to achieve cost parity with standard, non-traceable yarns, while maintaining superior quality and traceability across both Merino and strong wool inputs.

Relevance to Strong Wool

While the initial implementation has focused on Merino wool, this case study demonstrates how designed value chains can be applied to strong wool systems, where similar challenges of fragmentation, weak price signals, and limited product alignment persist.

The principles underpinning Norsewear's approach — long-term contracting, product-led fibre specifications, and direct grower engagement — are directly transferable to strong wool value chains seeking to improve value retention, market relevance, and farmgate returns.

This case study authorised by Tim Deane of Norsewear

3.2.6 Case study 2: Wool Rebel

Company Overview

Wool Rebel is a Swedish mono-brand creating quilted outdoor clothing, midlayers, and accessories insulated exclusively with FÅRTEX®, a proprietary insulation made from 100% Swedish wool. Founded in 2018 by Helena Holmquist and Carl Holmquist, the company is headquartered in Stockholm, where design and development are undertaken. In 2023, Charlotte de Besche joined the business as co-owner and Head of Design.

Wool Rebel operates as a vertically integrated brand, sourcing discarded local Swedish wool, transforming it into high-performance insulation, and selling finished garments directly under its own label. Production is carried out locally in small batches, reinforcing a slow-fashion, quality-led business model.

Country: Sweden
Industry: Wool textiles and apparel (local wool, insulation, circular value chains)

The Challenge

Swedish wool has historically been underutilised, with significant volumes treated as low-value by-products or discarded due to limited domestic processing options and weak market demand. At the same time, the outdoor apparel market is dominated by synthetic insulation materials with high environmental footprints and limited end-of-life options.

For Wool Rebel, the challenge was to demonstrate that locally sourced Swedish wool could be transformed into a technically credible insulation material and embedded within a commercially viable apparel model. This required overcoming perceptions around wool performance, building a new processing pathway, and integrating material innovation with brand, design, and supply chain control.

Business Model and Differentiation

Wool Rebel's business model is built around a circular, supply-chain-integrated approach. Discarded Swedish wool is sourced locally and processed into FÅRTEX®, a non-synthetic insulation material developed specifically for quilted garments.

Key features of the model include:

Use of 100% Swedish wool insulation, diverting wool from waste streams
Vertical integration from raw material sourcing through to finished garments
Local, small-batch production supporting supply chain resilience and flexibility
Mono-brand distribution, capturing margin through direct-to-consumer sales
Strong alignment between material choice, product performance, and brand values

Finished garments retail at approximately 3,000–5,000 SEK, with reported gross margins in the range of 50–60%, demonstrating that locally sourced wool and small-scale production can be commercially viable when paired with premium positioning.

Outcomes and Impact

For the business, Wool Rebel has established a differentiated market position at the intersection of technical outdoor wear, urban design, and sustainability. Control over material sourcing and production enables quality consistency, product storytelling, and strong brand authenticity.

For the supply chain, the model creates value from a previously under-utilised fibre, supports local actors, and contributes to the development of alternative domestic wool processing pathways. Wool Rebel is an active partner in The Swedish Wool Initiative, a collaborative effort to increase access to high-quality, competitive Swedish wool for industry use.

For consumers, the brand offers an alternative to fast fashion and synthetic insulation, aligning performance, durability, animal welfare, and local sourcing with purchasing decisions.

Relevance to Supply Chain Insight

Wool Rebel provides a clear example of how supply chain integration and material innovation can unlock value in neglected wool systems. By designing the supply chain around local fibre availability and end-product performance, the company demonstrates that small-scale, circular wool value chains can achieve strong margins while delivering environmental and social benefits.

The case highlights how ownership of material transformation, combined with mono-brand distribution, can improve value retention, reduce dependency on globalised supply chains, and reposition wool as a high-performance input rather than a commodity.

This case study authorised by Helena Holmquist of Wool Rebel

3.2.7 Case study 3: Devold of Norway

Company Overview

Devold NZ is part of the Devold Group, a European wool apparel manufacturer that uses Merino wool exclusively. In New Zealand, Devold NZ engages directly with Merino growers through long-term supply arrangements designed to align wool specifications with product and market requirements.

While Devold NZ does not utilise strong wool, its operating model provides a relevant comparative example of how designed value chains can improve value distribution and margin outcomes for growers.

Country: New Zealand
Industry: Wool textiles and apparel (Merino wool value chains)

The Challenge

Traditional commodity-based wool trading systems tend to prioritise short-term price discovery over long-term alignment between growers, processors, and end markets. This can result in price volatility for farmers, inconsistent fibre supply for manufacturers, and limited incentives for quality improvement or innovation.

For Devold NZ, the core challenge was securing a reliable supply of Merino wool that consistently met specifications, quality, performance, animal welfare standards, and sustainability requirements within a market structure that often failed to provide certainty or transparency to either growers or buyers.

> *"Commodity-based wool systems create misalignment between farm-level production decisions and end-market requirements."*

This challenge is comparable to those faced in the strong wool sector, where fragmented supply chains and weak alignment have constrained value creation.

Business Model & Differentiation

Devold NZ operates a designed, product-led, vertical value chain underpinned by long-term contracts directly with Merino growers. This approach shifts the relationship from transactional purchasing to planned supply for the production of quality, high-performance garments.

Key features of the model include:

- Long-term supply agreements that provide price transparency and income stability
- Direct engagement with growers, reducing intermediaries and transaction complexity
- Clearly defined fibre specifications linked to product performance outcomes
- Alignment of quality, animal welfare, and sustainability expectations across the chain

By designing the value chain around the end product and working back to the farm gate, Devold NZ treats wool as a strategic input rather than a commodity.

> *"Long-term contracts allow greater alignment between fibre quality, processing efficiency, & product outcomes, while providing growers with greater certainty"*

Outcomes & Impact

This vertical value chain design has delivered tangible commercial and operational outcomes.

For the business:

- Increased security and consistency of fibre supply
- Reduced procurement risk and improved production planning
- Enhanced traceability and market credibility
- Consistency of high-quality garment production with a reduced rejection rate

For growers:

- Greater price certainty and reduced exposure to market volatility
- Improved ability to plan and invest in farm systems
- Clearer feedback loops between on-farm practices and end-market performance

While specific financial data is not disclosed, the model demonstrates that:

- Contract-based supply arrangements can deliver more stable or premium returns relative to spot market trading
- Streamlined value chains reduce inefficiencies and costs across the system
- A greater share of total value can be retained at the farm level when wool is integrated into a designed, product-driven supply chain

Relevance to Strong Wool

Although Devold NZ operates exclusively in Merino wool, this case study illustrates the broader principle that designed value chains can streamline processes and enable greater margin retention for growers.

> *"The principles of long-term contracting, product-led fibre specifications, and direct grower engagement are transferable across wool types, including strong wool."*

This case study authorised by Craig Smith of Devold

3.2.8 Summary of findings

Across interviews in New Zealand, the United States and Europe, intentionally designed value chains consistently delivered:

1. Higher and more stable fibre prices
2. Reduced volatility
3. Lower rejection and mismatch costs
4. Stronger brand trust
5. Greater ability to monetise certification and data

Importantly, several of these examples were grounded in New Zealand businesses actively redesigning how wool flows from farm to finished product. The insight is therefore not geographically constrained. It is structurally transferable.

3.3 Implications

For New Zealand strong wool, the implication is not that international markets hold all the answers.

Rather, New Zealand already contains many of the elements required for designed value chains:

- Credible assurance systems
- Strong fibre testing capability
- Established processing knowledge
- Globally respected brand reputation

What remains uneven is integration.

Commodity pathways still dominate large portions of the clip. Designed pathways exist — but are not yet the norm.

The interviews conducted both offshore and at home demonstrate that: Margin recovery does not require reinventing the fibre. It requires redesigning how the fibre moves.

New Zealand's opportunity lies not in copying overseas models, but in integrating its existing infrastructure — accreditation, data capability and manufacturing expertise — into deliberately structured commercial systems capable of retaining value at farm level.

Chapter 4: Discussion & Synthesis

4.1 Discussion of Findings

The three insights explored in this report — internationally recognised accreditation, robust data, and intentionally designed value chains — are presented as distinct themes. However, the findings suggest they are not independent levers. They are interdependent components of a modern value system.

Across interviews in New Zealand, the United States and Europe, a consistent structural shift was observed. Wool is no longer assessed solely on physical characteristics such as micron, yield or colour. It is increasingly evaluated as a system — incorporating environmental performance, traceability, governance integrity and supply-chain transparency.

This shift alters the commercial logic of the sector.

Historically, strong wool has operated primarily within commodity frameworks, (Textile Exchange, 2025; Wool Impact, 2025). Price has been driven by global supply and demand dynamics, with limited differentiation beyond physical specification. Within that model, improvements in on-farm practice have not consistently translated into improved returns because the market mechanisms required to recognise and reward those improvements were absent, (Wool Impact, 2025).

The research indicates that this is no longer universally the case. In value-driven markets, differentiation is possible — but only when supported by credible infrastructure.

Certification functions as access.

It determines whether fibre can participate in procurement processes at all.

Data functions as proof.

It substantiates environmental and performance claims, enabling comparison and strengthening buyer confidence.

Designed value chains function as translation mechanisms.

They convert assurance and proof into structured commercial arrangements capable of delivering margin to growers.

Importantly, none of these elements operate effectively in isolation.

Certification without data risks becoming superficial.

Data without certification may lack recognised legitimacy.

Both without value-chain design struggle to translate into durable financial outcomes.

The case studies examined in this report demonstrate this interaction clearly.

At Keraplast, regenerative accreditation was paired with formal contracts and premium-sharing mechanisms, (R. Moore, personal communication, December 23, 2025).

At Shaniko, certification and peer-reviewed carbon data travelled together to brand partners, (J. Carver, personal communication, August 8, 2025; Research Gate, 2025).

At Exterkate, accreditation was embedded within transparent cost modelling and collective negotiation, (R. Exterkate, personal communication, December 10, 2025).

At Norsewear and Devold, traceability and long-term contracting strengthened both product integrity and grower pricing stability, (T. Deane, personal communication, January 17, 2025; C. Smith, personal communication, February 28, 2025).

In each example, the commercial impact did not arise from fibre alone. It arose from system design.

The findings also challenge a common assumption within commodity sectors — that value capture requires vertical integration or complete disintermediation. The research suggests otherwise. Many successful models retain multiple actors within the chain. The difference lies not in chain length, but in clarity of alignment.

Designed value chains do not necessarily remove intermediaries. They remove misaligned incentives.

Another consistent theme was sequencing. Markets that delivered measurable premiums did not begin with farm-level certification uptake alone. They began with clear downstream demand signals. Accreditation and data were adopted in response to identifiable buyer requirements and then embedded within contractual frameworks that translated differentiation into pricing structures.

This sequencing has significant implications for the New Zealand context. Increasing certification uptake or expanding environmental measurement programmes in isolation may not deliver improved returns if downstream market integration is absent. Conversely, where accreditation and data are strategically aligned with defined market channels, margin recovery appears achievable.

The research further highlights that margin retention is not solely a function of price premiums. Reduced volatility, clearer price signals, lower rejection rates, improved product specification alignment, and enhanced planning certainty all contribute to stronger farm-level outcomes. Designed systems stabilise income as much as they lift it.

The most compelling finding is that these dynamics were observed across geographies — including within New Zealand itself. This indicates that the sector's margin challenge is not rooted in fibre inadequacy. It is rooted in structural alignment.

The opportunity therefore lies not in reinventing strong wool, but in redesigning the commercial architecture surrounding it.

4.2 Synthesis of Findings

The three insights presented in this report describe a single integrated pathway for value capture.

At its core, the pathway can be expressed as follows: Market Demand → Recognised Accreditation → Verified Data → Designed Value Chain → Retained Margin

Each element builds upon the previous one.

1. Market Demand

   Value capture begins with identifying markets willing to pay for differentiated wool. Without clear demand signals, subsequent investment in certification or data risks becoming cost rather than leverage.

2. Recognised Accreditation

   Internationally recognised, independently governed certification provides access to those markets. It reduces buyer risk and signals compliance with defined standards.

3. Verified Data

   Robust, standardised and independently verified data substantiates claims permitted by certification. It enables defensible environmental positioning and strengthens negotiating power.

4. Designed Value Chains

   Intentional commercial design translates differentiation into contracts, pricing mechanisms and supply relationships that protect and retain value at farm level.

5. Retained Margin

   Margin is realised not simply as a price uplift, but as a combination of premiums, stability, reduced volatility, new revenue streams and stronger buyer relationships.

The synthesis reveals that the future of strong wool profitability is systemic rather than incremental.

Increasing clip volume without differentiation is unlikely to materially improve returns.

Reducing on-farm costs without addressing market structure will not resolve volatility.

Certification or data collection without commercial integration will struggle to generate margin.

Instead, profitability appears to depend on coordinated alignment across assurance, measurement and commercial design.

For New Zealand, this presents both strategic clarity and practical challenge.

New Zealand possesses several structural advantages:

- Strong baseline farming standards
- Established assurance programmes
- Advanced fibre testing capability
- Recognised global brand reputation
- Manufacturing and product design expertise

However, these components often operate in parallel rather than as an integrated system.

The synthesis suggests that value recovery requires integration.

This does not imply that the entire strong wool clip must move into designed value chains. Commodity channels will continue to exist and serve specific markets. However, the evidence indicates that meaningful margin recovery is most likely within deliberately structured segments aligned to identifiable demand.

The synthesis also reinforces the importance of collective action. Aggregated supply, consistent standards, and shared data infrastructure increase negotiating leverage and reduce duplication. Fragmented approaches risk diluting impact.

Finally, the research suggests a shift in sector mindset. Rather than asking: "How can we produce wool more efficiently?" The more commercially relevant question may be: "How can we align wool with the expectations of markets already signalling willingness to pay?"

This reframing positions strong wool not as a declining commodity fibre, but as a differentiated natural material capable of participating in premium, data-driven, assurance-based markets — provided the supporting commercial architecture is intentionally designed.

The three insights presented in this report are therefore not isolated recommendations. They form an integrated system, (Figure 6 below).

Certification enables access. Data substantiates performance. Designed value chains convert both into retained margin.

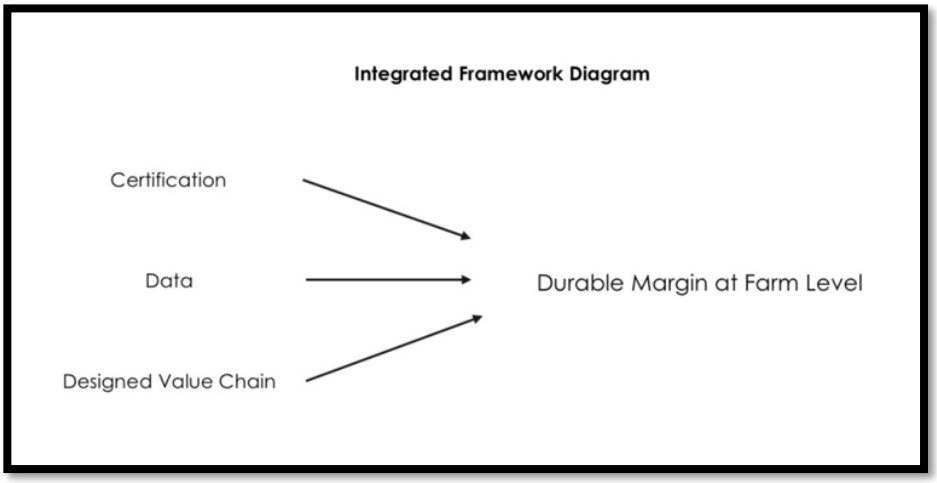

Figure 6. ***Integrated Framework Diagram.***
Source: Author's own synthesis.

Where these elements operate together, strong wool transitions from being price-exposed to being strategically positioned.

The challenge for the New Zealand strong wool sector is not whether global markets value sustainability, traceability and integrity. The challenge is whether the sector can align its assurance systems, data capability and commercial design in ways that allow those values to translate into durable farm-gate returns.

That alignment — rather than fibre improvement alone — may determine whether strong wool moves from structural decline to structured resilience.

Conclusion & Implications

Conclusion

New Zealand's strong wool sector does not lack intrinsic value. It lacks structured value capture.

Since commencing this research, market conditions for strong wool have improved, with prices in early 2026 lifting toward shearing-cost equivalence (PGG Wrightson Wool, 2026; Beef + Lamb New Zealand, 2025). While this short-term recovery is encouraging, it does not resolve the structural exposure of the sector to commodity cycles. The international evidence presented in this report suggests that sustained margin improvement is more likely to arise from accreditation alignment, robust data infrastructure, and intentionally designed value chains than from periodic market correction alone.

This research set out to examine how stronger commercial returns might be created, captured, and retained from strong wool within modern global markets. Across interviews and case studies in the United States, Europe, and New Zealand, one consistent message emerged: markets are not rejecting wool — they are rewarding it differently.

Three structural signals were clear:

- Internationally recognised accreditation is increasingly a condition of participation.
- Robust, independently verified data underpins credibility.
- Intentionally designed value chains determine where margin ultimately resides.

None of these elements operates effectively alone. Certification without market alignment becomes cost. Data without commercial integration remains compliance. Designed value chains without assurance struggle to maintain trust.
When combined, however, they form a coherent commercial system:

Certification enables access.
Data substantiates performance.
Designed value chains translate proof into durable farm-gate return.

The strongest international examples were not those producing the most wool, but those structuring relationships deliberately. Whether in regenerative biotechnology, organic

livestock systems, climate-verified fibre groups, or vertically integrated brands, margin was retained where transparency was engineered, incentives were aligned, and long-term contracts replaced transactional trading.

These models were not geography dependent. Elements already exist within New Zealand — testing infrastructure, assurance systems, manufacturing capability. What varies is the degree of integration and strategic alignment.

The future profitability of New Zealand strong wool will therefore depend less on volume growth or incremental cost reduction, and more on how effectively the sector aligns with global expectations around assurance, evidence, and supply-chain design — and whether those elements are embedded within commercial systems capable of returning value to the farm gate.

Strong wool can command value. But value must be structured.

Implications

The implications of this research are structural and strategic.

Certification Must Be Market-Led

Internationally recognised accreditation is increasingly required in value-driven markets. However, proliferation of schemes without buyer recognition risks escalating cost without return.

The strategic question is not: How many growers can we certify?
But: Which markets are willing to pay, and which standards do those markets recognise?

Selective alignment around globally recognised, independently governed standards is likely to generate greater leverage than fragmented adoption. Certification must sit within contractual pathways capable of translating compliance into premium.

Data Capability is Commercial Infrastructure

Credible, standardised, independently verified data is now a prerequisite for procurement participation. Fibre without defensible measurement risks structural undervaluation, particularly in regulated markets.

Investment priorities include:

- Wool-specific life-cycle methodologies
- Reusable, standardised data systems
- Independent verification frameworks
- Aggregated measurement at scale

Measurement alone does not create margin. Verified performance linked to structured agreements does.

Beyond fibre price, environmental metrics — soil carbon, emissions intensity, biodiversity, water — may provide layered revenue streams when formalised within credible frameworks.

The commercial sequence is clear: Identify demand → Align methodology → Verify independently → Embed in contracts → Monetise.

Value Chain Design Determines Margin Retention

Commodity exposure is structural, not inevitable.

Designed value chains share common features:

- Long-term contractual commitments
- Transparent pricing mechanisms
- Direct grower-to-brand relationships
- Fibre specifications linked to product performance
- Reduced transactional friction

Aggregation and coordinated supply strengthen negotiating leverage. Fragmentation weakens it.

For growers, designed chains reduce volatility and improve planning certainty. For brands and processors, they secure supply integrity and differentiation. For the sector, they may improve wool's economic contribution within farming systems.

Collective Alignment May Be Required

Individual change is unlikely to shift sector-wide outcomes without coordinated infrastructure.

Opportunities include:

- Standardised certification alignment
- Shared data frameworks
- Aggregated supply pools
- Transparent pricing models
- Strategic downstream partnerships

The most resilient international models were collaborative, disciplined, and structured — not isolated.

Reframing Strong Wool's Strategic Position

Strong wool has largely been positioned as a commodity fibre competing on price. The international examples examined demonstrate alternative pathways:

- Regenerative protein input (biotechnology)
- Climate-positive fibre with measurable impact
- Design-led premium interior material
- Component within vertically integrated brand systems

In each case, value was unlocked through assurance, data, and supply-chain design.

New Zealand's advantage lies not solely in production scale, but in its ability to integrate natural system integrity with credible measurement and coordinated commercial design.

The Risk of Inaction

As regulatory and traceability expectations increase, fibre lacking recognised assurance and credible data risks progressive marginalisation.

The greater risk may not be declining price — but declining eligibility.

Final Reflection

Strong wool stands at a crossroads not because it lacks relevance, but because the market context has evolved.

The question is no longer whether wool is natural or renewable. It is whether those attributes are verified, structured, and translated into commercial systems that reward them.

This research does not present a single solution.
It presents a direction.

A future in which New Zealand strong wool is:

Internationally assured.

Credibly measured.

Deliberately structured.

In such a system, wool is not a by-product. It is a strategic asset.

Strong wool can deliver stronger returns — when value is intentionally designed to flow back to the farm gate.

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