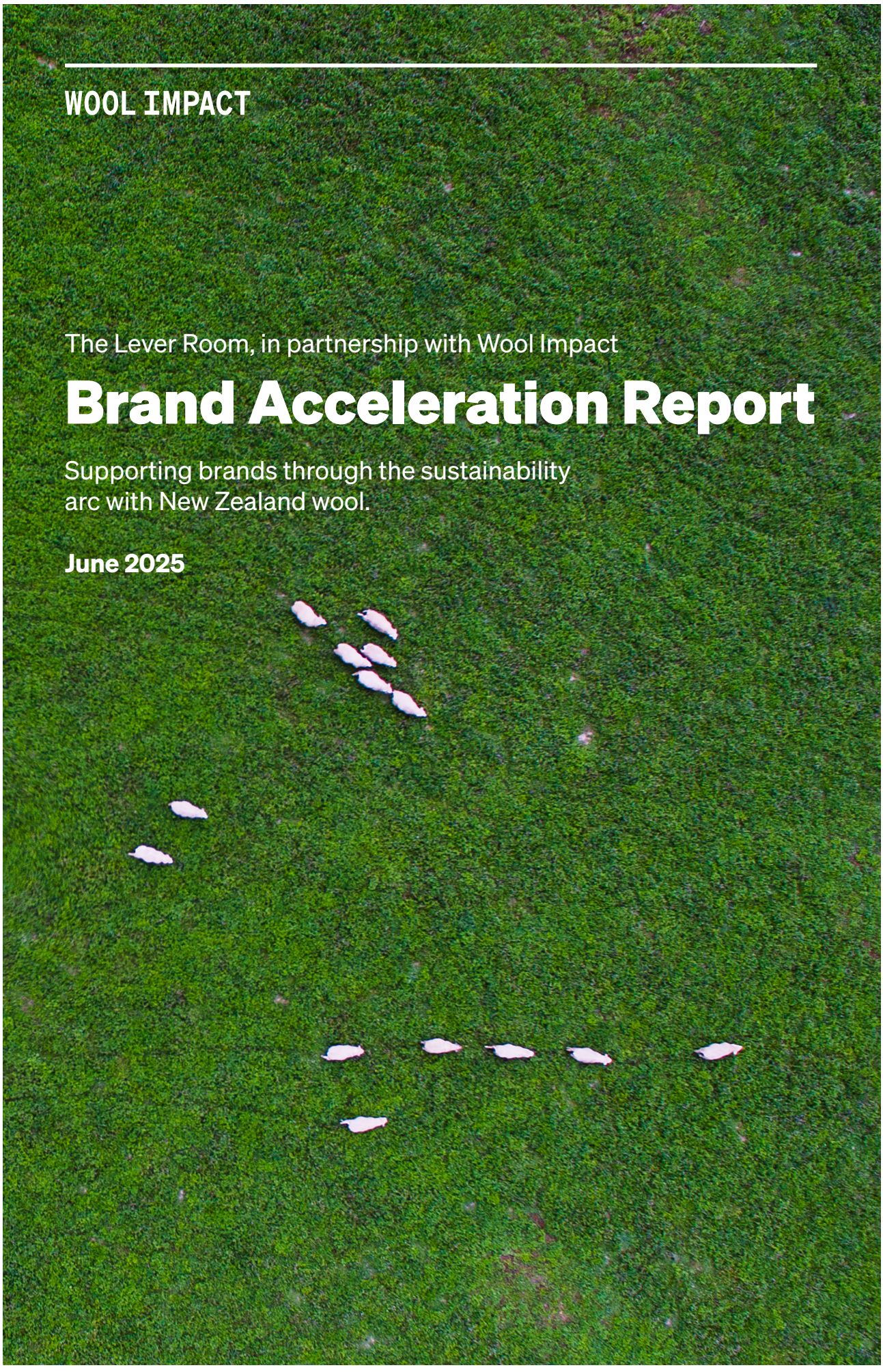
WOOL IMPACT

The Lever Room, in partnership with Wool Impact

Brand Acceleration Report

Supporting brands through the sustainability arc with New Zealand wool.

June 2025



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Brand Acceleration Report

Supporting brands through the sustainability arc with New Zealand wool.

Wool Impact exists to rebuild New Zealand's global reputation as the producer of the world's best wool, catalyse demand and restore profitability to strong wool growers.

Formed in 2022, Wool Impact is a partnership between the New Zealand government, contributing $4.5 million through their Sustainable Food and Fibre Futures fund, alongside WoolWorks and sheep sector companies; Silver Fern Farms, Alliance, ANZCO, Ovation and AFFCO.

Without the positive support from these parties, Wool Impact would not be able to close the gap between growers and the global markets for their wool.

Why we wrote this now:

Wool has long been admired for it's renewable, natural performance benefits. For brands using wool, or considering fibre choices, that is no longer enough.

This report is a resource for Aotearoa New Zealand's wool sector; brands, value chain partners and growers. It is intended to accelerate our collective appreciation of the challenges and opportunities our sector is facing with respect to sustainability. It also prioritises the allocation of resources to make it easier for brands to use wool, and purchasers to choose wool. These are the variables that will ultimately improve demand and value for New Zealand's wool growers, and the vibrancy of the sector.

A global and local point of view is taken throughout. Over 80% of New Zealand's strong wool is currently exported as greasy or clean fibre. International brands and markets need support from our sector. That said, domestic manufacturers of wool products have bold aspirations and we are seeing an unprecedented level of innovation on shore. These businesses need the sector behind them, allowing them to scale quickly.

Our sector is not alone in grappling with how to serve sustainability solutions to brands in a way that adds value at both ends of the chain. In creating this report we've drawn heavily on resources that are not our own and provided references to those resources we've found particularly useful. This is an incredibly dynamic space and will require our sector to be dynamic. We welcome your queries, thoughts and additions.

Photo: Bremworth, Foxtrothome.co.nz

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Wool brand acceleration report 2025

Supporting brands through the sustainability arc with New Zealand wool.

ANDY CAUGHEY, CEO WOOL IMPACT

The time is right for wool. Consumers are aspiring to live in ways that are good for their health, and the health of the planet.

Products made of wool have enduring beauty and performance, absorb indoor air pollutants (contributing to the wellbeing of a generation that spends 90% of time indoors), and host a raft of other benefits.

What will it take for wool's benefits to translate to value for wool growers?

For Wool Impact it starts with building demand. Brands are the influencers of demand. We need to understand what's important to them and their end-users to; support existing wool brands grow, make it easier for innovators to use wool, and support brands to switch to New Zealand wool from alternative fibres.

New Zealand's strong wool growers consistently produce some of the best wool in the world, but they are largely disconnected from the brands that use their fibre. As a result, we've seen a void in knowledge regarding how to position the fibre in a way that adds value in market, and can command value for growers. In forging closer connections and understanding between brands and growers and maintaining the integrity of differentiated fibre stories beyond the fibre's physical parameters, we believe there is potential for more direct transactions that reward growers.

New Zealand's strong wool is used in diverse products, from flooring to powders, pigments and particles. Mostly it is used in products designed for the built environment; carpets, acoustic solutions, furnishing textiles, and insulation.

Echoing a sentiment in the 2024 KPMG Agribusiness Agenda, nobody is waiting for us to sell these products to them. "Consumers are basing their purchasing decisions on a wider range of factors than purely price, but real effort is required to get them to focus on our products."

Reliance on "natural and renewable" claims is not sufficient to entice global brands to use wool in their products. Brands are facing disclosure legislation, corporate reporting requirements, and green building standards. Fundamental to securing wool's fair share of attention is supporting brands with evidence of wool's ability to solve problems for people and planet.

In this work, we have drawn widely on insights from wool secter participants and the broader agri-sector to advance our knowledge. We extend our sincere thanks to those of you that were interviewed, and have supported Wool Impact's journey to date. We are grateful for your contributions.

This report explores the global context wool users are operating within, learning directly from brands, value chain participants and thought leaders. The intention is to provide specific actions to grow demand and value for New Zealand wool, and secondly, to share these learnings so that our sector might adapt, and grow.

Approach to this report

REBECCA MILLS, THE LEVER ROOM

Rebecca Mills is a strategist with 30 years' experience in sustainability, regeneration and climate impact. She is the founder of The Lever Room, an organisation that helps clients deliver and measure practical, credible sustainability outcomes.

Rebecca has worked internationally at the intersection of business, design and environmental systems. She was invited to co-design the founding strategy for The B Team alongside Sir Richard Branson and Jochen Zeitz, advocating for business practices that put people and planet at the centre. As Principal of Sustainable Design and Construction at the UK Environment Agency, she contributed to some of the country's largest regeneration projects.

Through The Lever Room, Rebecca has led systems-level initiatives including the development of the Homestar Residential Rating Tool for the New Zealand Green Building Council. Her work bridges strategic insight with measurable action, supporting the transition to a net zero, nature positive future.

Rebecca holds a Master's in Biosphere Science and Impact Measurement Training from Saïd Business School, University of Oxford.

New Zealand strong wool is an iconic part of our national identity and economy. And it's at the centre of life for countless New Zealand families and communities - their histories, and their futures.

Wool has several strategic advantages in its contribution to human and planetary wellbeing. However, brands using synthetic fibres are now claiming new approaches in the circular economy and regenerative business.

We need to sharpen our positioning and narrative to increase value. The sector has the potential to once again be a leading material of choice for those searching for natural, healthy, and sustainable brands.

To gain a holistic view of the industry needs, opportunities and challenges we undertook diagnostic interviews with a range of brands and value chain partners in the wool, and broader primary sector ecosystem. We have also delved into some of the regulatory and market context behind interview comments to share learnings within the wool sector.

Increasing the price of New Zealand wool requires a multifaceted approach that encompasses various aspects of strategic positioning, on farm production, value chains, distribution, and industry collaboration to create value and meet the evolving needs of customers in domestic and international markets.

Four levers were identified that can be used to accelerate brands toward volume and value, benefiting both those brands and the growers that supply them.

1. **Sustainability and carbon reporting**
2. **Story building towards Nature Positive wool**
3. **Scaling high value collaborations and partnerships**
4. **Positioning for procurement**

Key levers and courses of action

Four levers were identified that can accelerate brands toward volume and value, benefiting both those brands and the growers that supply them.

1. SUSTAINABILITY AND CARBON REPORTING.

Best practice and next practice.

Regulation and corporate commitments focused on environmental impact are affecting brands, their value chains, and raw material suppliers, now.

Meeting recognised industry best practice and next practice standards can make it easier for brands to continue using wool, choose wool in new product development, and have wool products specified, particularly in the building sector.

Wool is a natural, renewable resource, and a high performing fibre. However, beyond design and performance the building sector globally is focused on carbon reduction. Life Cycle Assessment (LCA) reported via an independently verified and registered Environmental Product Declaration (EPD) is used to compare the carbon intensity of products. An EPD reports gross greenhouse gas emissions.

It's important that brands are able to measure and report on-farm emissions AND removals (removing carbon dioxide from the atmosphere and locking it away for decades, centuries, or millennia) to lower the carbon footprint of their products and maintain competitiveness.

SECTOR PRIORITIES:

1. Around 80% of a wool product's impact is on-farm. An accurate presentation of wool's impact is required based on robust and consistent methodology.
2. High quality sector data to make it easier for manufacturers and brands' LCA/ EPD providers to undertake environmental assessments.
3. Traceability systems are required to meet market requirements for value chain transparency.

2. STORY BUILDING.

Towards Nature Positive wool.

Nature Positive is the next arc of sustainability, beyond carbon. Nature Positive means halting and reversing nature loss to ensure there is more nature in the world in 2030 than there was in 2020, and continued recovery after that - a shift from the "less harm" to "more good" approach.

While the building sector is heavily focused on carbon right now, we are seeing Nature Positive metrics increasingly being integrated into international reporting frameworks and standards.

Farmers' stewardship of nature often goes unseen, and in the case of the majority of New Zealand's strong wool production, undocumented.

Consumer research shows the interconnectedness between sustainability, nature and natural products, and health and wellbeing in the minds of consumers.

Wool has a real positioning opportunity to develop a Nature Positive and human positive narrative to support brands.

SECTOR PRIORITIES:

1. A Nature Positive vision and roadmap for the wool sector is needed.
2. First, brands need to be able to communicate a well evidenced perspective on where the sector is today - a Wool Sustainability Snapshot.
3. Work in this area should be science backed, align with the reporting requirements of the building sector, and the broader reporting needs of major wool sectors and geographies.

= an area that Wool Impact is actively progressing

3. SCALING HIGH VALUE.
Collaborations and partnerships.

By leveraging collective expertise, resources, and networks the sector can address common challenges and capitalise on opportunities for wool.

This should not be limited to the New Zealand wool sector. International brands committed to wool are equally motivated, but need greater connectivity and transparency of New Zealand wool production practices and metrics. They also seek greater direction on how best to advocate for wool in their markets.

Collaboration should not be limited to those actively involved in wool. New Zealand farmers produce diverse products (e.g. meat, dairy, honey), and opportunities to address crunchy topics collectively should be considered.

SECTOR PRIORITIES:

1. Use insights from brands globally to inform the development of a wool sustainability narrative that is well evidenced, relevant and resonant, and can be applied consistently.
2. Consider ways to partner across agribusiness sectors to enable proper and consistent measurement of impact, easing the burden on farmers and improving data quality.

4. POSITIONING FOR PROCUREMENT.
In government and commercial sectors.

The volume potential and influence of government procurement, commercial, hospitality and residential development projects is attractive to wool brands internationally.

From the 1st of July 2025, all New Zealand government agencies will be required to consider wool in new builds equal to and over $9 million and refurbishments equal to and over $100,000.

New Zealand A&D firms are ready to include wool products within their designs, however they need access to a range of options that meet requirements for functionality, warranties, design and colour, performance and environmental standards.

The construction sector accounts for 37% of global emissions and decarbonisation is a key focus. The building sector increasingly relies on independently verified and registered EPDs to communicate transparent and comparable data about the life cycle impact of a product.

The development of a Product Category Rule, or a robust process for including farm system carbon removals, will provide brands a credible pathway to reduce emissions.

SECTOR PRIORITIES:

1. Platforms used by the building sector should be populated with quality wool product information.
2. Outline performance standards and testing relevant to product and application for government procurement and the commercial sector.
3. Provide specifiers practical information on products available to support procurement requirements of the government agency tenders.
4. Develop a draft Product Category Rule for wool.
5. Monitor uptake of government wool use directive, including where wool is excluded.

New Zealand strong wool production basics

Wool production - what NZ wool is known for.
Strong wool is defined as 31+ microns and equates to approx. 77% of our national clip.

Annually, we trade approx. 100,000 tonne of strong wool – this is about one-quarter of global trade in stronger wools.

We transact two-thirds of the world's premium strong wool. Our wool is highly desirable due to its whiteness, low vegetable matter and the ability to source large commercial quantities on a consistent basis.

Fibre exports.
Around 85% of wool produced in New Zealand is exported as greasy or clean wool fibre. Around 80% of the wool produced in New Zealand is scoured before being shipped or used domestically. Other export categories are primarily wool carpet or yarn. Off shore, wool is processed into semi-finished or finished products (mainly carpets and rugs) for local and export markets.

China, the largest export market for New Zealand strong wool has recently dropped from taking 57% in 2015 to 37% in 2024. India meanwhile has been growing, increasing its purchases by around 40% from 2023 to 2024. The UK and EU countries are historical trading partners. Volumes to the UK has steadily declined with the reduction in manufacturing there.

Domestic use - significant and growing.
There is no central point of data collection for domestic use of wool. Wool Impact has worked widely across the sector to understand the use profile, and projected growth of brands that currently use the 15% of New Zealand's wool that is not exported as greasy or clean wool fibre.

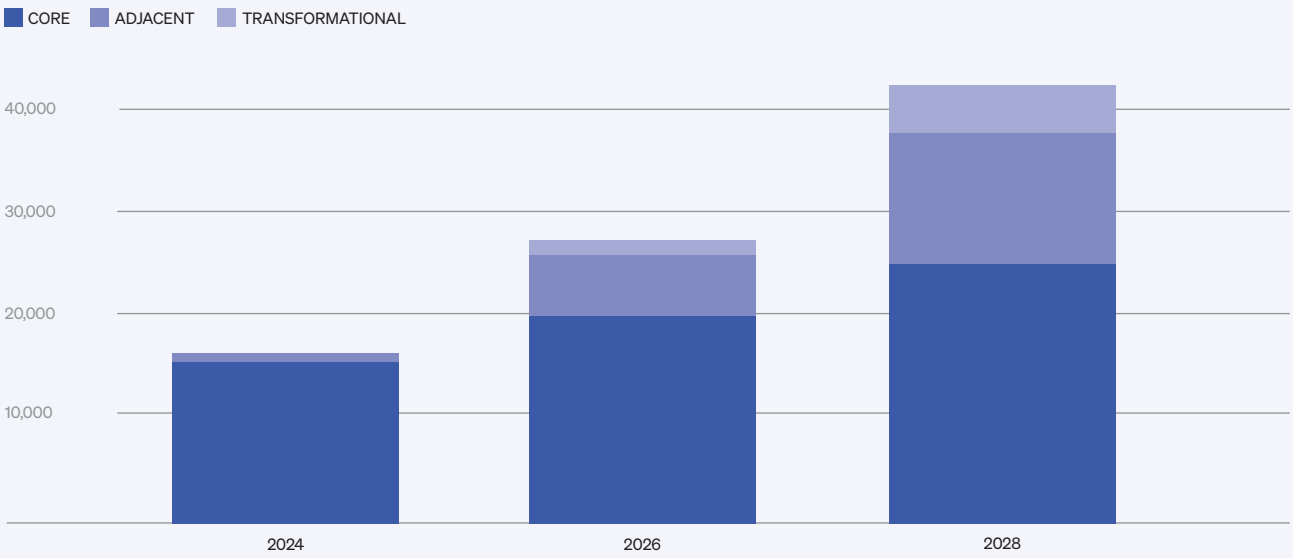
The current and projected use across core (carpet, furniture, bedding), adjacent (acoustic panels and tiles, insulation, geotextiles), and transformational (novel innovations using wool) are charted to the right. This indicates strong growth in domestic manufacturing that could see domestic wool use more than double, helping to add value domestically and reduce reliance on volatile export markets.

New Zealand wool exports ($ FOB) Top 3 product categories

For the year ended 30 June 2024

Domestic wool manufacturing (volume of wool (clean) used)

Estimated use and growth projections



Examples of products in categories. Core=carpets, furniture, bedding.
Adjacent = acoustics, geotextiles, insulation. Transformational = novel products

Sustainability and carbon reporting

Best practice and next practice.

The 2024 Chapman Tripp report for Aotearoa Circle - *Protecting New Zealand's Competitive Advantage: a Snapshot of Global Sustainability Reporting and Trade Trends* - provided a snapshot of the raft of regulations and changes that are happening offshore. 80% of New Zealand's exports (by value) are destined for markets with mandatory climate related disclosures in place, or on the way.

"New Zealand may be a long way from its major markets, but it is not an island in the regulatory sense. To meet customer expectations and government-imposed trade requirements, we need to understand what other countries are doing around ESG reporting standards and what they, in turn, expect from us."

One of Wool Impact's key drivers is to make it easier to use wool. Getting our own reporting right is a must for better market access and value.

Meeting recognised industry best practice and next practice standards can help enhance the perceived value of wool, justify a higher price point, and mitigate risk.

The future of sustainability reporting is likely to undergo several transformations as society continues to prioritise environmental, social, and governance (ESG) issues. Overarching themes include:

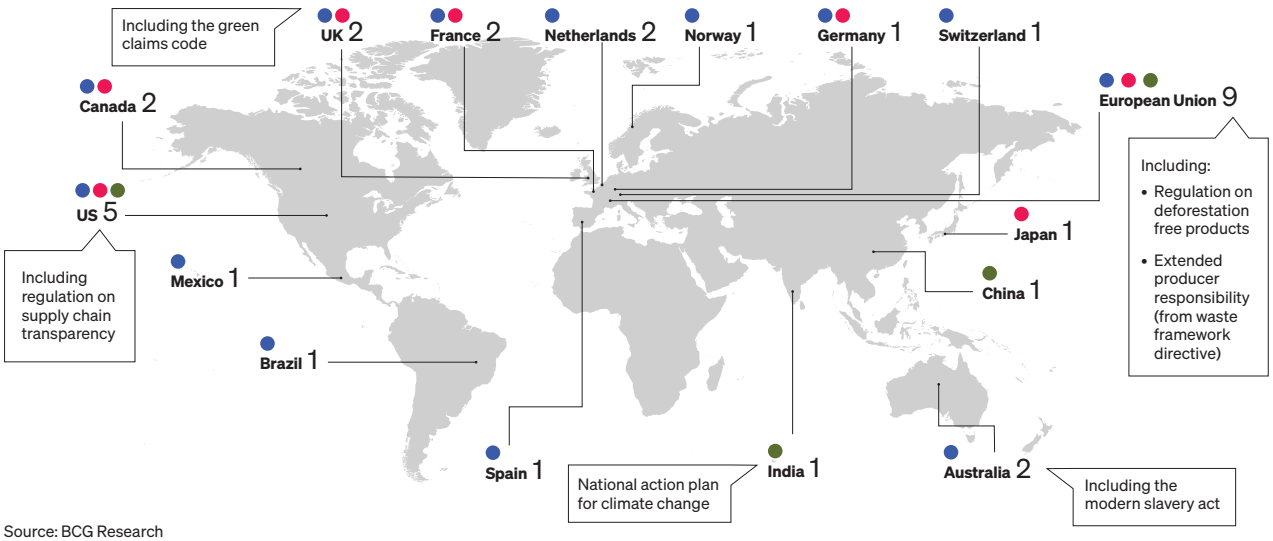
- Regulatory oversight will drive companies to improve reporting standards, as evidenced by the EU Green Deal's aspiration to narrow the sustainability certification field and increase the rigour behind reporting and claims.
- Globally, efforts to standardise reporting frameworks are likely to continue via the International Sustainability Standards Board (ISSB) and others.
- The focus on double materiality including the growing demand to quantify and report on social and environmental impacts, as well as financial, will increase.
- Regulators have greenwashing in their sights and financial penalties and reputational risks are large.

Supply chain transparency will be a "must have" as reporting of environmental and social performance extends beyond the boundaries of individual companies to encompass entire supply chains (shift from Scope 1 and 2 to include Scope 3).

As illustrated below, many new regulations and reporting frameworks are underpinned by requirements for traceability.

Fashion and apparel brands will contend with more than 35 pieces of significant new legislation in the next two to four years

Social Traceability Environment
# of pieces of sustainability legislation within each region



Source: BCG Research

Key insights

Regulation is impacting brands and their value chain, now.

All industries need to prepare for a future of regulation. The impacts of the likes of the EU Green Deal are being felt by brands globally as the EU seeks to improve environmental performance and reduce greenwashing. The Circular Economy Action Plan being considered under the EU Green Deal may include:

1. A **Digital Product Passport** to improve transparency of a product's eco-design characteristics such as how durable, reliable, reusable, upgradable, reparable it is, how easy it is to maintain, refurbish and recycle, and how energy and resource efficient it is. DPP's will be underpinned by Life Cycle information.

2. Life Cycle Assessment information will increasingly need to be presented using a prescribed methodology such as a **Product Environmental Footprint (PEF)**. This is to standardise how the environmental performance of products is measured, communicated, and improved. In the realm of products for the built environment, the EU have aligned Environmental Product Declaration (EPD) requirements with PEF.

3. End of life will come under increasing scrutiny, with the responsibility falling on the producer under a harmonised **Extended Producer Responsibility** approach in Europe.

4. The **Corporate Sustainability Reporting Directive** works in tandem with the EU Green Deal and Sustainable Finance Initiative, requiring large and listed EU companies to report their financial health, and also provide detailed disclosures on environmental, social, and governance (ESG) matters.

Corporate leadership is imposing sector standards.

In their recent report *Unpacking Asia-Pacific Consumers' New Love Affair with Sustainability* Bain & Company found that in almost all countries, consumers expect brand owners, along with governments, to lead the sustainability charge.

In the building sector, it's often the specifier, or Architecture & Design (A&D) firm, who acts as an enabler or gatekeeper to the specification of large volumes of products. Ambitious goals are being set to accelerate these A&D companies toward a lower carbon future.

Diane Hoskins, Co-CEO of Gensler, the world's largest A&D firm, said "we can no longer ignore that building materials account for half of a building's total lifetime carbon footprint." Each year, Gensler influence over 1.25 billion square feet of real estate and their ability to affect change is not lost on them; "we are leading the industry to change the industry".

Gensler is committed to reduce carbon emissions on their projects to net zero by 2030. To accelerate the shift towards low embodied carbon emissions beyond a building's structure (the repeated churn of interior materials over the life span of a building has a huge impact) Gensler launched Gensler Product Sustainability (GPS) Standards in 2023.

Standardisation of reporting - currently about "less bad" rather than "more good".

Specifiers globally, Gensler included, increasingly demand an Environmental Product Declaration (EPD) - a trusted summary of Life Cycle Assessment (LCA) results that is undertaken consistently for the construction sector and within a product category (defined by a Product Category Rule) to standardise reporting.

EPDs are frequently compared based on their carbon footprint, reported as Global Warming Potential (GWP). For some product categories Gensler are setting maximum GWP limits in their GPS standards. EPDs don't currently report net Global Warming Potential (emissions minus system removals (sequestration)). If measured credibly, farm system removals should create opportunity for wool growers and brands. The rulebook for natural fibres is yet to be written.

LCA methodology is not applied consistently for wool.

Much of a wool products' impact is on-farm. The measurement of impact, particularly Global Warming Potential (GWP) (see footnote) at this stage of the value chain is critical. However, methodology is being applied inconsistently and in ways that do not position wool well relative to other fibres. Participants in the industry are addressing this in different ways.

On-farm carbon removals could create value.

More research is required to further understand the actual composition of native vegetation on sheep farms. This information is important for increasing the accuracy of on-farm carbon sequestration and to support work with sheep and beef farmers to better manage the vegetation they have on their farms.

It's acknowledged that some pasture soils in New Zealand have potential to accumulate carbon, but it is influenced by our unique soil properties.

Pricing and certification of on-farm carbon removals or insets as a way to reduce emissions is a growing area and opportunity requiring expert guidance.

Significant investments are being made into how to better use LCA to represent the true impacts of growing wool. There is a need to harmonise base assumptions around LCA impacts, such as allocation between co-products like meat and wool, that are context specific to New Zealand strong wool and applied consistently, and chart best practice for including eco-system

NOTE: Carbon dioxide (CO_2) resulting from the burning of fossil fuels **(carbon emissions)** is the main greenhouse gas (GHG) contributing to warming. However methane (CH_4) and nitrous oxide (N_2O) also contribute to global warming. **Global Warming Potential (GWP)** is a measure of the ability of all GHG's to trap heat in the atmosphere over time, relative to carbon dioxide (CO_2). So, one tonne of a GHG is compared to one tonne of carbon dioxide to get a CO_2-equivalent (CO_2-e) and these can then be added to provide a total GWP number.

Actions

1. Robust Carbon Footprint/LCA Method Development.

Quality Life Cycle Assessment information for New Zealand strong wool production and early stage processing available to the sector, and published in LCA databases, will make it easier for brands to use wool.

Key to this is understanding the how LCA can be used to best assess the impacts of wool products, recognising the significant proportion of impact that is on-farm. Two major variables are;

- the allocation of impacts between sheep co-products (primarily meat and wool) as there is a high degree of variability in the way LCA is being conducted for wool products around the world, depending on farm system, and market requirement; and,
- a credible system for measuring and including on-farm removals (sequestration) into LCA methodology and EPD reporting.

Market acceptability and credibility (avoidance of greenwashing) are key considerations.

Commercial entities and the International Wool Textile Organisation are currently interrogating the application of LCA methodology to wool products. They are also seeking a way to capture a more accurate picture of system impacts and benefits.

The Make the Label Count Campaign also advocates for the inclusion of aspects of plastic fibre systems that are currently ignored, e.g. microplastics and plastic waste.

2. Consider development of a Product Category Rule.

One that reflects the impacts and benefits of farming practices. Consider how on-farm removals can be credibly reported within EPDs to provide a net lower Global Warming Potential.

3. Tools for farmers to capture the right information.

Fit for purpose tools for farmers to capture the right information for an LCA practitioner to calculate brand specific on-farm emissions and removals are needed. It would be prudent for the wool sector to align with existing approaches taken across agri-sectors, agribusinesses, banks, and other institutions to simplify the data burden on-farm and equip farmers with useful information to inform decision making.

4. Opportunities to reduce carbon.

Most wool product emissions occur on-farm. Transport, processing and packaging are relatively minor contributors to the overall carbon footprint. Significant carbon removals also happen on-farm and it is important these be measured and recognised through;

- increased resolution of above ground vegetation through satelite data;
- greater understanding of the potential and measurement of soil carbon removals; and,
- guidance on how woolgrowers and brands can create shared value from carbon removals.

5. Beyond carbon – whole farm system perspectives.

Carbon should not be considered in isolation. Whole farm system perspectives including land management and utilisation, and biodiversity are becoming increasingly important consumer perspectives to be viewed alongside carbon.

Whole-of-farm thinking is needed to reimagine traditionally unproductive land into something of real value and positive benefit. These aspects should be considered in wool's Nature Positive vision and associated Sustainability Snapshot.

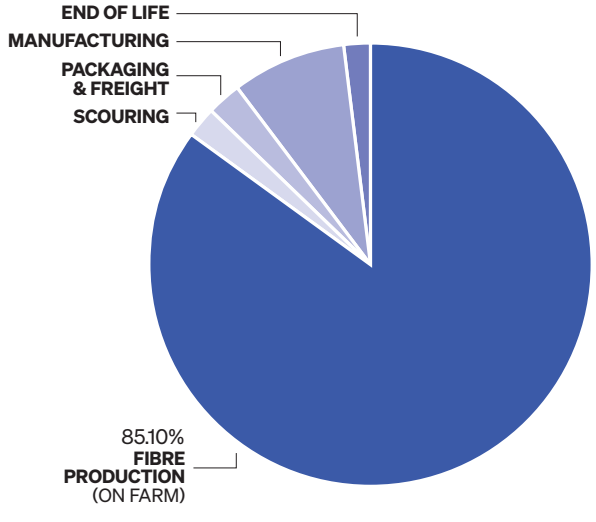
6. Sustainability Snapshot and template for brands.

To create partnership value and avoid greenwashing New Zealand's wool sector could provide information that aligns with reporting requirements and makes it simpler for brands to use wool.

7. Transparency is key.

Systems are needed to deliver transparency through value chains that are often global. New Zealand Farm Assurance Programme (NZFAP) provides traceability to point of export however as brands tackle their Scope 3 reporting they will need transparency at every stage.

Global Warming Potential of various stages of the production of 1 m^2 wool upholstery fabric (approximate only).



NZFAP - Your mark of absolute care.

New Zealand Farm Assurance Programme certification provides confidence that the wool brand's source is produced using the highest global standards of animal welfare and traceability. This supports the claim that New Zealand wool is the best in the world, grown by healthy, well cared for animals.

The NZFAP programme and independent audit body are, under the Government-appointed 'Joint Accreditation System of Australia and New Zealand', responsible for providing accreditation, certification and inspection to ISO standard ISO/IEC17065.

NZFAP Plus extends beyond NZFAP to incorporate environmental factors. NZFAP Plus Silver requirements are about starting the journey, identifying key resources on farm, and putting the foundational steps in place toward developing and implementing a Farm Environment Plan.

NZFAP Plus Gold requirements are about implementing the plan and ongoing monitoring or include requirements that are more aspirational and positioning to meet customer demands in the future.

Methane reduction - AgriZero.NZ

Methods to reduce agricultural emissions are being accelerated through research (New Zealand Agricultural Greenhouse Gas Research Centre) and commercialisation (AgriZero).

AgriZero is a 50:50 partnership between agribusinesses, banks and the Ministry for Primary Industries to develop and deploy effective solutions to reduce biogenic methane and nitrous oxide emissions, improving the value and competitiveness of our agriculture products globally. AgriZero's ambition is to support a 30% reduction by 2030 and a drive towards 'near zero' by 2040. The wool sector, while not direct contributors, will be beneficiaries of this.

Story building towards Nature Positive

The next arc of sustainability, beyond carbon.

Nature Positive means halting and reversing nature loss to ensure there is more nature in the world in 2030 than there was in 2020, and continued recovery after that.

Nature Positive shifts us beyond damage limitation toward the enhancement of biodiversity and natural eco-system resilience – a do more good approach.

Key insights

Nature risk awareness has greatly accelerated. It is now well accepted that climate change and nature loss are deeply interrelated.

Nature has absorbed 54% of human-related carbon dioxide emissions over the past decade, but the capacity of the world's forests, oceans and other ecosystems to do this is weakening, according to a World Wide Fund for Nature (WWF) report. Nature action is climate action.

Nature Positive has gone mainstream; from nature-positive cities, to businesses, to fashion shows. Major global businesses, including the likes of Salesforce, GSK, Holcim and Unilever, are setting out how they plan to contribute to a nature-positive world.

Nature Positive is being integrated into international reporting frameworks and standards:

- The Taskforce on Nature Related Financial Disclosures (TNFD) launched in 2021 followed hot on the heels of Climate-Related Financial Disclosures (CRFDs). The TNFD is developing a framework for organisations to assess and disclose their impacts on nature and biodiversity, as well as the dependencies and risks associated with these impacts.
- Science Based Targets initiative (SBTi), a community of more than 5,000 businesses around the world committed to a clearly-defined company specific path to reduce emissions in line with the Paris Agreement goals has introduced nature based targets (SBTN).
- The Planetary Boundaries framework originally proposed in 2009 by Johan Rockström and leading scientists shows climate as just one of nine earth systems that have critical limits within which a safe operating zone for humanity can be sustained. Seven have been crossed.
- Planetary Accounting operationalises the Planetary Boundaries by comparing environmental impacts derived from human activity to Planetary Quotas - a share of allowable impact to stay within or return to a safe zone. It provides a globally relevant, science-based framework to assess impact on nature of a product.
- Global GreenTag who specialise in providing Life Cycle Assessments and Environmental Product Declarations (EPD) has introduced an NP+D Nature Positive Declaration.

Farms have an untold nature story.

Native vegetation (forest, shrubland, grassland and wetland) covers 43% of New Zealand. Of the native vegetation present today, the majority (62%) occurs on public conservation land, although a substantial amount (25%) occurs on sheep and beef farms.

This 2.8 million hectares of native vegetation on sheep and beef

farms accounts for about 27% of the total area (10.6 million ha) of all sheep and beef farms (Norton and Pannell, 2018). Trees are often an integral component of each farm and provide several benefits (e.g. erosion control, shelter, shade) but also represent a potential mitigation practice to decrease net Greenhouse Gas (GHG) emissions.

Farmers' stewardship of nature often goes unseen and, in the case of the majority of New Zealand's strong wool production, undocumented, providing an opportunity for future reporting.

Sustainability includes health in consumers' minds.

The importance consumers place on various elements of "sustainability" has recently been reported by Bain & Company (2024). Interestingly, for Asia-Pacific consumers, top rated sustainability elements are largely health and transparency related, as illustrated in the following chart.

In terms of where sustainability ranks in purchase criteria more broadly, "healthiest for my family", and "quality" rate first and second priorities for all markets covered (Asia-Pacific, European and US consumers). "good for the planet" rates third among Asia-Pacific consumers and fourth among European and US consumers (behind "lowest price/best value for money"). The report also highlighted a "say-do" gap - the difference between what a consumer says they care about and their actual purchase decisions - which is attributed largely to a lack of trust in sustainability claims.

"Chemical / additive free" also rated highly. In collecting information for this report, one interviewee posed the question, "how do we know that recycled plastic is "safe"?" The eco or human toxicity of various fibres and their performance additives in production, use, recycling or end of life is assumed to be negligible but lacks scrutiny.

A common theme voiced was that wool is grown, not made, as part of a natural system. For millennia animals, humans and nature (themselves inseparable) have co-existed within the Earth's tolerances. The burning of fossil fuels, cutting down forests, and industrialisation of agriculture have accelerated climate change to intolerable levels.

Other interviews revealed a desire to return back to the way that we used to do things. One market influencer shared "we have gone so far down the science route that we've lost touch with nature." Others conveyed their love for wool, and a frustration with it not being easier to convey wool's nature benefits.

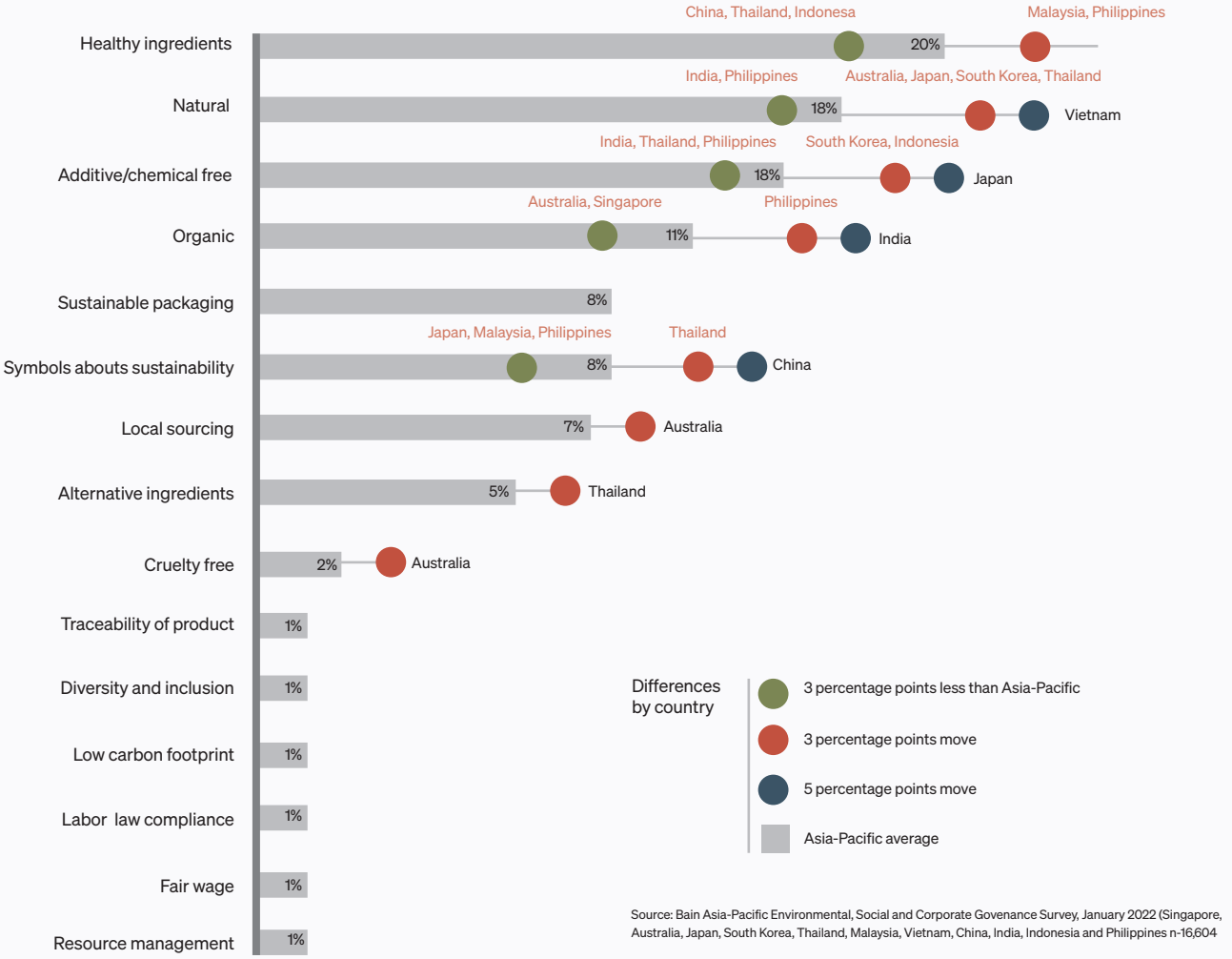
There is merit in applying collaborative effort to defining, validating, incentivising and promoting Nature Positive wool production practices.

Promising financial signals from global brands like Nestlé, who are rewarding dairy farmers supplying Fonterra and Synlait for sustainability improvements, provide a compelling reference point for discussion with wool brands globally. If brands can see a clear path to both greater market uptake of wool products, and meeting their corporate reporting targets through investment in Nature Positive practices, can grower revenue be improved?

Textile Exchange's Regenerative Agriculture Landscape Analysis cites the co-benefits of farming regeneratively to include overal soil health, biodiversity, water availability and quality, and community resilience and livelihoods are documented in hundreds of peer-reviewed journal articles and publications.

"These co-benefits call for a clearer and shared understanding of what it means to measure and model these benefits, and how they should be rewarded to incentivise further improvement."

10 most important sustainability elements to Asia-Pacific consumers, as percentages



Source: Bain Asia-Pacific Environmental, Social and Corporate Govenance Survey, January 2022 (Singapore, Australia, Japan, South Korea, Thailand, Malaysia, Vietnam, China, India, Indonesia and Philippines n-16,604

Actions

1. Farmer incentives towards Nature Positive action.

Explore opportunities to incentivise farmers to protect, restore and add to the amount of native bush and tree plantings – gullies, fence lines, summer shade and shelter belts, so that farm environments are better able to capture carbon, and become more biodiverse.

Several commercial entities in the wool and meat sector are advancing this approach, providing the neccessary frameworks for data collection and verification.

2. Support value chain partners to communicate New Zealand wool benefits, and connect brands with growers.

Cost and ease have driven brands to petrochemical fibre solutions. Cost remains an important consideration when advancing a conversation around wool's nature benefits with brands and value chain partners.

Value chain partners are unlikely to want to pass on more cost, and may need further support to communicate a value proposition beyond price. They may find themselves between a rock and a hard place with respect to brands' ambitious ESG goals or reporting requirements and a lack of information on the fibre they source.

Helping partners quantify the path to value, be it opportunities to grow market share, contribution to their corporate goals and/or positioning, increased specification, partnerships with retailers, price premiums, stabilising cost of production, and/or fibre supply security is important.

3. Develop Nature Positive AND Human Positive narratives.

Develop an overarching wool narrative that leaps the carbon focus evident in markets for wool products today to a more encompassing view of nature and living beings. An **evidence based** Nature Positive narrative advantages land based systems where nature outcomes can be most influenced by the practices farmers adopt.

Health remains a key driver for purchase in consumer and specifier markets. Wool in interior environments offers unique benefits to human health, particularly with the fibre's ability to manage, absorb and bind indoor air contaminants like VOCs (Volatile Organic Compounds) and micro plastics released by non-natural substances, and its contribution to comfort through delivering tactility and adapting to thermal and humidity changes.

4. Invest in a Nature Positive pathway for New Zealand wool.

Knowing there is opportunity for New Zealand wool in the global shift toward nature positive requires investment in many areas:

- Set a vision for Nature Positive wool, determine what would be required for that to be realised, and take stock of where wool production and sheep farming sit on that pathway currently.
- Develop an overarching Wool Sustainability Snapshot to support global brands with their reporting requirements now, and proivde case studies where farmers are working to advance nature outcomes, either independently or in partnership with brands.

Collaborations and partnerships

To address common challenges and advance opportunities.

Collaboration and partnerships can play a significant role in increasing the demand for and value of New Zealand strong wool. By leveraging collective expertise, resources, and networks the sector can address common challenges and capitalise on opportunities in the wool industry.

Connection with and understanding brands' needs (tangible and intangible) is key to providing wool solutions of value. Although it is enticing to take a 'fibre first' approach, the brand, what it stands for, and the benefits that wool delivers through product in use is how end user value is created.

Key insights

Collaboration with co-product sectors to provide clear direction, systems and market outcomes for farmers needs to be explored further.

New Zealand Farm Assurance Incorporated (NZFAI), through NZFAP provides base level assurances, largely around animal welfare and traceability of product to farm, for both meat and wool.

The auction selling system is seen as a barrier to building stronger value chain connections from wool growers to consumers.

The New Zealand strong wool sector currently has a reliance on an auction as the key mechanism to transfer ownership of wool. The auction is poor in delivering quality signals and sustainable prices on a consistent basis, and does not deliver the transparency or data accuracy needed for brands to meet regulatory and organisational commitments.

A common narrative for wool that encapsulates and simplifies wool's sustainability credentials is needed.

This need was reinforced by large international wool brands, to brands and innovators in the New Zealand start-up ecosystem on how best to measure and narrate the impacts of New Zealand wool.

Repetition of a base narrative is important across the range of people that influence the purchase decision; interior architects and designers, property developers, specialty retailers, industry sectors such as hospitality and education, ingredient sourcing specialists, and affluent consumers. The nuances in information requirements between audiences can be picked up by brands.

The meat industry is working with farmers to adopt NZFAP+ which builds on NZFAP as a foundation and includes standards for people, environment and biosecurity. NZFAP+ for wool would likely enhance wool's value proposition. Careful consideration is required regarding whether it would satisfy the data requirements for Environmental Product Declarations.

Better collaboration between industry and research organisations is sought.

There is frustration that a wealth of investment in wool research has been mothballed in research institutions, and that some Universities have a requirement to retain intellectual property for funded research. This has the potential to hinder commercialsiation and value generation for the IP developed.

Photo: Wisewool

Actions

1. Establish more direct partnerships with brands.

Long term partnership and direct sourcing relationships between brands and farmers have the potential to provide multiple positive benefits including but not limited to:

- Increased price transparency, sending farmers strong signals as to the value of improvements in fibre quality or production practices.
- The ability for brands to select fibre based on optimisation of benefits beyond fibre such as carbon insets, sustainable practices and improvements, biodiversity outcomes, etc.

The potential for the creation of a marketplace for connections between brands and farmers could be explored.

2. Partner across agribusiness to develop common data collection.

Farmers are now operating in a data era. Systems to simplify and optimise this data transition, data outputs, access and updates are required. To date, the New Zealand agri-sector has operated in silos, each developing data requirements based on a specific reporting need and Wool Impact's work has found the building sectors' requirement for an Environmental Product Declaration that follows specific Life Cycle Assessment rules requires perhaps the most comprehensive data set.

Part of the challenge Wool Impact has experienced is understanding minimum data requirements to provide clarity to farmers, and confidence of data sovereignty.

The need for collaboration and consistency is not going unseen. Banks, consultants, and funding providers to the various agri-sectors all see the duplication of effort and the impact on farmers.

The new venture The Common Ground seeks to provide a forum for coordinated effort across many areas, offering a place where Aotearoa New Zealand's food and fibre sector gathers to seize new opportunities and solve common challenges. Data requirements would appear to be one.

Consistent measurement of impact.
Rabobank New Zealand's Whitepaper 2024: Maintaining our Emissions Edge cites a lack of robust framework of standards, guidance or benchmarks to enable proper and consistent measurement of the impact of farming practices have on land, water and emissions. "This lack of common benchmarks inhibits good practice further up the value chain in agribusiness, food processors and consumer-facing branding as they are unable to convert their good practice to value".

Ideas download – collaborative opportunities from our sector's perspective.

Many opportunities to improve wool's engagement and profile with key brand, influencer and consumer audiences were raised in discussions. These are captured in summary below. Many draw parallels with work or direction scoped by other wool interested parties such as Campaign for Wool NZ and Mindful Fashion.

Priming the pump

- Guidebook on the benefits, processing pathways, end uses of wool and other natural fibres.
- Education capability / consistency of delivery to direct brands towards wool.
- Global design competition using strong wool. Partnership possibilities with Woolmark.

Incubating new demand

- Partnerships with New Zealand Incubators offering tailored services to wool-related startups.
- Link to NZ Impact Investment Ecosystem, VC and angel investor networks with a view of providing start up training.
- Leverage public good IP and funding partnerships such as NZTE's strategic impacts funding.

One truth for wool

- Sector wide Sustainability Report to give potential users of New Zealand strong wool confidence, e.g. NZ Wine Industry Sustainability Report.
- Within the report demonstrate adherence to best practice validation of the quality of wool, quality of care in production, quality of source and sustainability of New Zealand wool. Consider sector metrics and targets that can be updated yearly.
- This work should form the foundation of a compelling narrative that brands can leverage.

Communicate with leading manufacturers and brands

- Collaborate with international designers, manufacturers, and brands to create products using New Zealand wool; residential and commercial furnishings, personal care products, industrial and technical applications, pet products, gardening and agriculture, automotive interiors.

Trade missions, conferences and exhibitions

- Partner with influential industry players to co-host events or product launches that highlight the unique qualities of New Zealand wool.
- Work with NZTE to take groups of New Zealand wool companies on international trade missions (note the last trade mission had no representatives of the wool industry).
- Participate in prominent trade shows and exhibitions related to textiles, interior design, and agriculture, both domestically and internationally e.g. Milan Design Week, Venice Architecture Biennale.
- Luxury/premium brands often have concept stores e.g. Fisher & Paykel Experience Centre. Set up permanent or pop-up concept stores in major cities that showcase brands that use New Zealand wool.

Industry Tours and Field Visits

- Organise tours for international industry groups to visit New Zealand wool farms, processing facilities, and manufacturing sites.
- Provide first-hand experiences of the wool production process, highlighting sustainable practices and quality standards.

Networking and Relationship Building

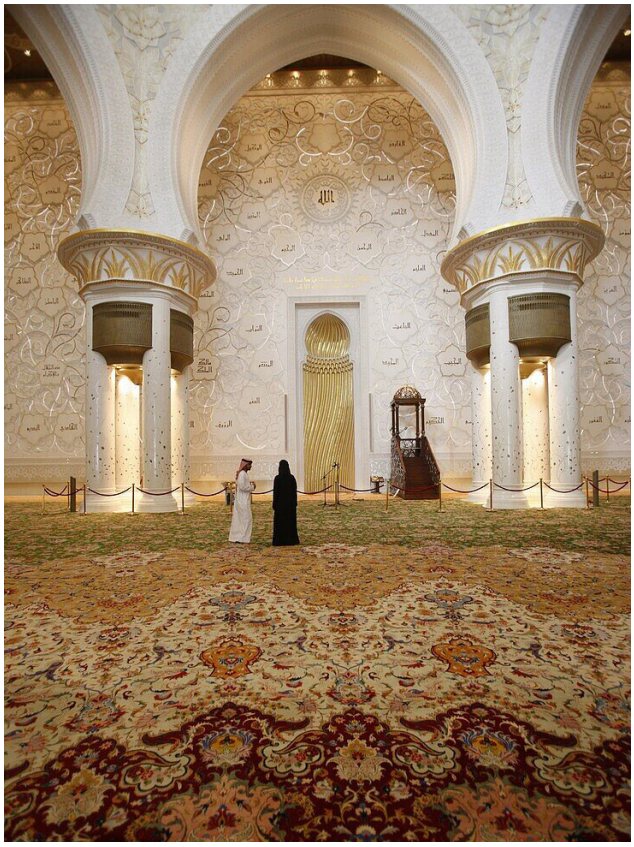
- Build relationships with key industry associations, organisations, and influencers globally to foster support and advocacy for New Zealand wool.
- Attend networking events, forums, and industry conferences to engage with potential partners and customers on an international scale.

Promotion

- Launch targeted media campaigns to raise awareness about New Zealand wool among industry stakeholders, leveraging platforms like industry publications, blogs, and social media.
- Seek out opportunities for press coverage and interviews to share success stories and case studies of businesses or projects utilising New Zealand wool. E.g. largest carpet in the world is made from New Zealand wool for Sheik Zayed Mosque in Abu Dhabi.

Consumer awareness

- Large-scale physical showcase that creates a legacy of "wow", e.g. Disney's plastic house of the future in 1970.



Positioning for procurement.

Evidencing the performance, sustainability and broader benefits of wool products for the government procurement and commercial sectors.

The volume potential of government procurement, commercial, hospitality and residential development projects are attractive to wool brands, both domestically and internationally. Use of wool products in these projects also has the ability to influence the uptake of wool products more broadly by streamlining specification processes and through increased public visibility.

Strong wool applications within the built environment include:

FLOORING	ACOUSTIC	INSULATION	FURNISHING	APPAREL	GEOTEXTILE
Tiles/ planks Broadloom Area rugs	Wall/ceiling panels Coverings Dividers	Batting Loose fill	Seating upholstery, wadding, and fill Bedding Curtains	Uniforms	Matting

To be specified for these projects, a more prescriptive selection process is typically applied in comparison to 'business-to-consumer' residential applications.

Key insights

New Zealand's government has strengthened its directive to use wool.

Wool Impact analysed the Ministry of Education procurement process in 2024 that resulted in the selection of imported synthetic carpet tiles for New Zealand's rural schools. This identified a selection hierarchy of; performance, safety, on-going supply and maintenance, environmental impact and cost. This indicated functional performance is critical to access opportunities in the first instance, after which other considerations, including sustainability, are weighted. At a minimum, wool products need to meet application and warranty requirements to have a seat at the table.

Over the past two years, a directive from the New Zealand Government to use wool where practical and appropriate in government buildings has been strengthened. From July 1 2025, all government agencies will be required to consider wool in new builds equal to and over $9 million and refurbishments equal to and over $100,000. The refurbishment threshold is considered relatively low, and would capture small, medium and large school and office government agency projects.

MBIE provides guidance, each government agency has agency.

The requirements and standards currently used by various government ministries and agencies are informed at a high level by the Ministry for Business, Employment and Innovation (MBIE) however each agency has autonomy over their application.

Guidance has recently been developed by MBIE to support procurement teams evaluating wool use in projects. When assessing if it is practical and appropriate to use woollen fibres agencies should consider a range of factors including but not limited to:

Cost	The whole-of-life cost and overall cost-effectiveness of using woollen fibres in comparison to other materials. For example, in addition to the up-front price, also consider the ongoing and end of life costs associated with materials.
Compliance with New Zealand Standards	Compliance with New Zealand Standards as well as with any standards that an agency has developed to meet the requirements of their portfolio. For example, where an agency has developed standards to ensure that a building is fit-for-purpose given the intended use.
Technical and functional requirements	The specific technical and functional requirements of the project and for the intended use of the building. For example, product performance and durability.
Supply	The available supply of woollen fibre products to meet project requirements and delivery timelines.
Sustainability and wellbeing	The relative sustainability and health benefits of using woollen fibres rather than artificial fibres.

Other factors identified by Wool Impact in consultation with architects include: NZGBC green building standards, warranties, design range, custom colour and design minimums, repair, end-of-life product stewardship, recycled-content, carbon impact, local manufacturing and jobs.

Wool brands will need to make it easy for architecture and design (A&D) firms to specify wool.

In the residential market, consumers expect brand owners, along with governments, to lead the sustainability charge. In the building sector, Architecture & Design (A&D) firms often act as an enabler or gatekeeper to specification of large volumes of product

New Zealand A&D firms are ready to champion wool and include wool products within their designs, however it is imperative they have access to a range of options that meet functional requirements including warranties, design and colour, performance and relevant standards.

Support may be needed for architects and designers to incorporate wool's sustainability story into their design story, and/or if they regularly use other materials and substitution is considered challenging. Existing channels such as design libraries and rep networks may be needed to raise the profile of existing products available that can be used now, including relevant performance information, minimum order quantities and environmental information.

Environmental impact of buildings is important.

Internationally, ambitious goals are being set to accelerate these A&D companies toward a lower carbon future. Diane Hoskins, Co-CEO of Gensler, the world's largest A&D firm, said "we can no longer ignore that building materials account for half of a building's total lifetime carbon footprint."

A commercial office fit out may only last seven years. While some specifiers are looking at ways to extend the lifespan of a fit out (wool products can retain their aesthetic and functional performance for much longer than the typical lifespan of a fitout), most are responding by sourcing new products with lower carbon footprint.

Brands are responding. At the 2024 NeoCon conference that serves the US commercial interiors sector, messaging like "beyond zero", "becoming biodegradable", "navigating the path to net zero" was prominent.

With projections indicating a 75% increase in floor area globally over the next 30 years, the need for decarbonisation efforts in the sector becomes even more pressing.

The buildings and construction sector accounts for 37% of global emissions, by far the largest emitter of greenhouse gases, exceeding the impacts of transportation and industry (UN Environment Programme). The sector's response to date has been to focus on reducing **operational emissions** – heating, cooling, lighting, and those emissions associated with running the building. As improvements are made **embodied carbon** – originating from the design, production and use of materials used to build and materials selected for furnishing (currently 28% of building emissions) - become a bigger part of the impact picture and this is becoming a focus for specifiers.

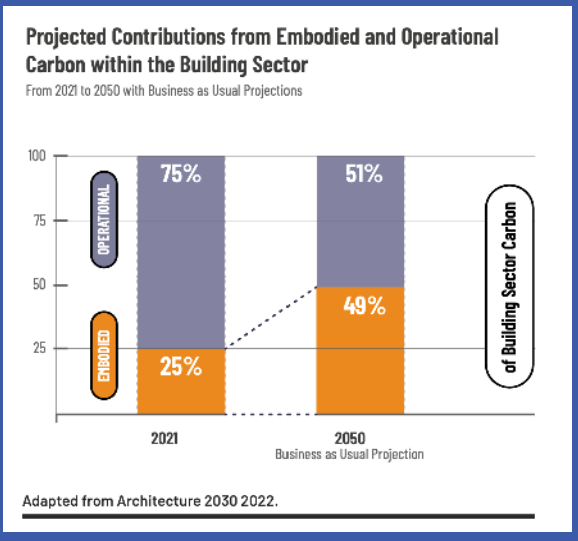


Photo: Floc

Key insights (continued)

Measuring impact in the building sector.

The building sector increasingly relies on independently verified and registered Environmental Product Declarations (EPDs) to communicate transparent and comparable data about the life cycle impact of a product. A specifier can then review and compare products that serve the same function.

An EPD for a specific product must be created and reviewed to international standards (ISO14025/21930, EN15804), based on the outputs of a Life Cycle Assessment, also conducted to international standards (ISO14040/14044). EPDs must follow an available Product Category Rule (PCR) to enable fair comparisons between products. EPDs must be registered and able to be accessed via organisations like EPD International (envriondec.com) and EPD Australasia (epd-australisia.com).

All public procurement bodies in the EU and European Economic Area are bound to use EPDs. Gensler requires an EPD for products to meet their Gensler Product Sustainability (GPS) standard.

EPDs are currently emissions only.

In the building sector, it is the Global Warming Potential (GWP) metric in an EPD that is most referenced. This provides a way for specifiers to assess the carbon impact of building products.

There are currently no PCRs that include farm system removals as a way to reflect the positive benefits of sheep farming and wool production. The development of a PCR, or a robust process for including system removals, will provide brands a credible pathway to reduce emissions.

New Zealand government's approach to reducing emissions is one to watch.

The building and construction sector currently produces around 20% of New Zealand's emissions. The Government has been looking to reduce the sector's emissions by decreasing the carbon emitted in the manufacture, transport, construction, maintenance and deconstruction and disposal of buildings (also known as whole-of-life embodied carbon).

In February 2023, the Ministry of Business, Innovation and Employment (MBIE) published a technical methodology for assessing the whole-of-life embodied carbon of buildings in New Zealand. In this framework, EPDs are recognised as the highest level of data quality. There has been some consideration of requiring the sector to report on, and eventually placing a cap on, whole-of-life embodied carbon as part of the building consent process.

Irrespective of potential regulation, the industry is motivated to reduce its impact and there are clear advantages for material providers in having an EPD as a reputable source of carbon data.

Carbon tools are increasingly common. Wool brands need to be able to contribute credible information.

Funded by the Building Research Levy, BRANZ invests in industry good research and knowledge transfer to lift the performance of Aotearoa New Zealand's building systems. Enabling environmentally responsible decision making regarding building designs and materials selections is a key part of this.

In July 2024 BRANZ announced a partnership with Masterspec, a construction specification platform for architects and product importers and manufacturers, to develop a national online resource of carbon data for construction materials and products.

The construction sector will be able to pull this data through into BRANZ' suite of calculators such as LCA Quick, a free tool that can be used to calculate the greenhouse gas emissions (and other environmental impacts) associated with building designs to allow architects, designers and structural engineers to iteratively reduce or design out carbon (and other environmental impacts).

Key insights (continued)

LCA Quick output templates can then feed directly into the New Zealand Green Building Council (NZGBC) LCA calculator for Green Star submissions, the Ministry of Education's LCA Report template and comparison with the carbon budget (developed by BRANZ and Massey University) to reflect an 'allowable' amount of greenhouse gas emissions for new buildings constructed before 2050.

In 2024 NZGBC released a new commercial building standard – the "most carbon busting yet": Green Star Buildings NZ, with 16 new minimum requirements to achieve a rating, and a greater focus on health, social responsibility, and the impact on community, people, and the planet.

It is imperative that wool products are backed by good quality data to secure a seat at the table. There's not enough certified information for wool products around technical performance and environmental impact. The costs of getting information certified is creating a barrier for smaller manufacturers.

Actions

1. Plug wool product information into platforms.

Platforms used by the building sector, such as BRANZ and NZGBC, should be populated with quality product information. Where possible this should satisfy environmental reporting requirements and emphasise wool's benefits to communities, the economy, in creating healthier, energy-efficient buildings.

2. Provide foundational environmental impact information to lower the cost for manufacturers.

A large portion of a wool product's carbon footprint is on-farm. By providing high quality sector information, manufacturers should be able to direct LCA providers to a common data source for greater ease of carrying out environmental assessments. Wool Impact has developed a good understanding of the various approaches to measuring emissions, and credible approaches to including removals. A guidance document is in development.

3. Develop guidance for wool brands to meet 'practical and appropriate' criteria.

Work with A&D firms to outline performance standards and testing relevant to product and application for government procurement and the commercial sector. Ensure relevant standards are available to wool product suppliers to consider as part of their innovation and R&D. Product information and design specifications, customer service and logistics will be critical. With evidence in hand, advocate for the inclusion of wool products on the approved supplier lists of the various government agencies.

4. Provide support for specifiers to meet 'practical and appropriate' application of wool products.

Provide specifiers practical information on products available to support procurement requirements of the Government agency tenders. This could be activated by working with existing channels such as local design libraries and supplier network representatives, and through the development of a digital wool product catalog or library that lists product and supplier information, making it easy for A&D firms to find alternatives to current synthetic products in use.

Refurbishment projects, in the first instance, should be an area of focus as the process may be well aligned for repeatability and likely has fewer constraints than new build projects.

4. Monitor uptake of government wool use directive, including where wool is excluded.

'Practical and appropriate' will be determined by procurement evaluation criteria and an assessment. Existing product suppliers will provide rationale as to why/where wool products ought to be excluded. This should be monitored via agency disclosures (annual reporting to MBIE) to inform where wool is missing opportunities.

Photo: Woolsource

To conclude

There are reasons to be optimistic about new demand and value for wool. There is also work to be done.

A reliance on “natural and renewable” as a reason for global brands to use wool in their products is not sufficient.

Regulation, green building standards, and corporate commitments focused on environmental impact are affecting brands, their value chains, and raw material suppliers, now.

The current approach required by the building sector to report a products’ impact (Life Cycle Assessment reported via an Environmental Product Declaration) has a core focus on carbon emissions.

On-farm, this is an incomplete picture that does not adequately reflect the interrelationships evident in, and benefits of, a natural fibre system. Our sector needs to move the narrative from a “less harm” to a “more good” approach.

This needs to happen in the context of meeting recognised industry best practice and next practice standards, making it easier for brands to continue using wool, choose wool in new product development, and have wool products specified, particularly in the building sector.

The shift in emphasis toward Nature Positive as a means to regenerate nature should provide opportunities for brands using New Zealand wool and growers.

Collaboration and efficiency of sector resources is key. Clear guidelines on how wool’s impact can best be measured to meet market requirements will save brands angst and investment.

Likewise, efficiency in the communication effort behind wool - one truth for wool - will better equip brands grow demand and value.

WOOL IMPACT’S ROLE:

Over the past three years, Wool Impact has worked with global architecture & design influencers, international and domestic brands, government procurement specifiers, and environmental specialists to build a greater appreciation for what it will take to grow demand and value for wool. This report is a snapshot.

At the beginning of this report we have identified those areas that we feel Wool Impact is well placed to progress action.

Wool Impact is a short lived organisation. We are working collaboratively across the sector, and formally in partnership with Campaign for Wool and Wool Research Organisation of New Zealand to develop an enduring model to take the sector, and much of this work, forward. No one entity can tackle this alone. We hope that in reading this report you will consider the role you can play, and continue to share with us the insights, actions and priorities that you believe will advance demand and value for New Zealand wool products and growers.

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