REGENERATIVE AGRICULTURE

MARKET SCAN AND CONSUMER INSIGHTS

Summary of research findings, the New Zealand context and what the findings mean for New Zealand sheep and beef farmers

beef + lamb new zealand

Key findings of the research include:

Regenerative agriculture, though **still in its infancy, is gathering momentum** and is set to become a significant trend in food and fibre products internationally.

Brands and multi-national businesses' are starting to follow farmers' leads in the uptake of regenerative agriculture.

While the concept of regenerative agriculture has yet to properly take hold among consumers as a driver of their choices, there is a **growing consumer interest** in regenerative agriculture.

Consumers indicate willingness to pay more for regeneratively produced food, especially if science can show it tastes better, is better for you – and is better for the environment. There are opportunities to link regenerative agriculture with solutions to climate change.

There is **lack of a clear definition** of 'regenerative agriculture' at present but the current broad definitions align with the way New Zealand sheep and beef farmers farm. We also need to examine other aspects to 'regenerative' that may be worth adopting.

There are some 'regenerative' practices that may be worth adopting within New Zealand farming systems. Further research and testing is required to test their applicability and quantify the benefits.

There is a **significant opportunity for the New Zealand red meat sector** to position itself to take advantage of this trend.

We will need to:

- define what 'regenerative' means **in a New Zealand context**
- ensure 'regenerative' attributes are **built into our New Zealand story** – in particular Taste Pure Nature®
- have **verifiable and relevant standards** of 'regenerative agriculture' to link in with international supply chains and underpin the story
- ensure any approaches and claims are **backed by science**

Executive summary

Background to research

Interest in regenerative agriculture among food producers, brands and consumers has been growing globally. While debate continues about what the term constitutes and its effectiveness versus conventional agriculture, limited work has been done to date to understand its potential among end-consumers.

Regenerative agriculture was identified as a potential opportunity through Beef + Lamb New Zealand's (B+LNZ) Shaping the Future of the Red Meat Sector report in 2019.

In 2020, B+LNZ and New Zealand Wine (NZW), with funding support from the Ministry for Primary Industries' Sustainable Food and Fibre Futures fund as part of its Fit for a Better World programme, commissioned Alpha Food Labs (Alpha Foods) to understand the current state and future market potential of regenerative agriculture in food and wine within three of New Zealand's international markets – the United States, Germany and the United Kingdom.

Implications of this research

B+LNZ believes this research is significant in terms of future opportunities for New Zealand sheep and beef farmers. Based on its findings, we believe there is strong potential to build regenerative agriculture into both the narrative of New Zealand agriculture and to incorporate further elements which make sense within our local production systems.

We need to act soon

There is growing awareness of, and support for, regenerative agriculture among industry and consumers in Western markets, and consumers say they are willing to pay more for regeneratively produced red meat products.

The research shows that positioning regenerative agriculture as part of the solution to climate change has the potential to capture consumer interest – however, linking regenerative production to health and product taste outcomes would drive even greater consumer appeal.

Given the growing interest, we need to act before our competitors to capture this opportunity.

New Zealand is in a good position to do this

We believe the majority of New Zealand's sheep and beef farming practices naturally align with key pillars of regenerative products and production. This isn't to say all farms are applying all principles all the time, but in general New Zealand is better placed than other countries to meet these requirements.

The fact that our farming systems are so different from 'conventional agriculture', in North America in particular, is an advantage. The Alpha Foods market scan highlights that changing these 'conventional' North American farming systems, especially feedlot-raised beef and sheep meat, will be an enormous challenge and require massive adjustment along the supply chain.

The regenerative agriculture movement therefore provides New Zealand a competitive advantage that will be hard for many of our competitors to replicate at scale.

A common theme throughout the research was that the future of regenerative agriculture hinges on the collaborative efforts of farmers, processors, distributors, investors, brands, scientists, policymakers, marketers, the media and consumers to make the most of opportunities. No one link of the food supply chain can make it happen alone but New Zealand (compared to our global competitors) already has many of those links.

New Zealand already has the infrastructure in place to make the most of this opportunity – whether that be our better environmental stories and commitment to addressing climate change, our industry's country of origin brand (Taste Pure Nature) and our industry-owned assurance schemes such as the New Zealand Farm Assurance Programme (NZFAP) and New Zealand Farm Assurance Programme Plus (NZFAP plus), or B+LNZ's farm planning and extension programmes which provide farmers the necessary skills, tools and resources to reach these certification levels.

Though there is a consumer preference for local, New Zealand can still win through our disproportionate carbon footprint over food miles and build on existing perceptions – and science – that production practices in New Zealand are already better environmentally.

Getting the definition/s right is key

While there is no unified single definition of what regenerative agriculture is globally, this creates an opportunity for New Zealand to step forward to craft that definition. We need to make the complex simple (and relevant) for consumers.

The Ministry for Primary Industries (MPI) has worked across the primary sector to develop a set of principles for regenerative agriculture in New Zealand, which has merit. Broadly speaking, they define regenerative agriculture as:

> *"a set of practices that in isolation or collectively, may result in improved outcomes for our productive land, freshwater and marine environment, our climate, our animals, and for the people that grow and consume our food and fibre products".*

When developing definitions for New Zealand, we need to co-design with Māori and ensure integration of concepts such as Te Taiao.

We also need to get certification right

Related to this, New Zealand can also set an example for the world on how to work with its farmers to build certification or assurance schemes that provide consumers with confidence and clarity about their food, but also provides flexibility for farmers to manage their operations and achieve positive ecosystem outcomes on their terms. If we don't do this, global brand owners will define it for us.

We need an integrated approach to marketing

The regenerative agriculture movement is a chance for New Zealand to go deeper on communicating to the world the essence of New Zealand agriculture and provide new story dimensions to existing global campaigns such as Taste Pure Nature.

Combining this story with additional scientific data on potential connections between ecosystem health in New Zealand (over and above the work we have already done on life-cycle analysis and reports on the amount of vegetation on sheep and beef farms) and increased nutrient density in the meat produced in our grass-fed systems (e.g. the Pasture Raised Advantage Nutritional Research) would provide a compelling argument for buying regeneratively grown foods.

We therefore believe:

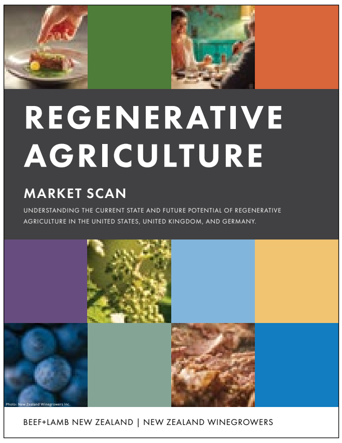
- expanding the Taste Pure Nature brand messaging to include the practices that form regenerative agriculture in New Zealand makes sense - Taste Pure Nature can provide context for New Zealand brands to be considered regenerative, before being tied to specific, auditable standards.
- the red meat sector should continue to develop farm assurance programmes (e.g. NZFAP plus) which align with regenerative principles, localised for our context - NZFAP plus can act as a standard to underpin our farmers' and meat processing companies' regenerative claims, and ensuring the NZFAP plus standard aligns with emerging global standards (e.g. the Savory Institute's EOV) will give international supply chains - and ultimately consumers - confidence that we're following regenerative best practice.

Research methodology

Alpha Foods undertook research in two phases. Full reports for each phase have been published.

Phase one – market scan

This phase sought to understand the current state of the regenerative agriculture movement from the perspective of knowledgeable individuals working and producing in this space across the value chain, from food brands, retailers, scientists, producers, foodservice and others.

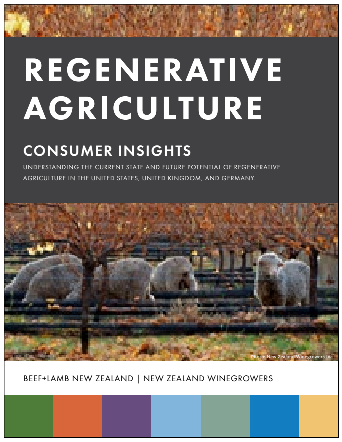


Phase two – consumer insights

This phase focused on understanding the attitudes, awareness and behaviours of everyday food and beverage consumers when it comes to food sustainability and regeneratively produced food – this included scanning the relevant and available literature as well as conducting a specific study with consumers. The study sought to understand:

- consumer awareness of and associations with regenerative agriculture
- drivers of food choices and where sustainability sits
- willingness to pay more – specifically for regeneratively produced food
- attitudes towards New Zealand
- what appeals most about regenerative agriculture
- preferred communication and narrative approaches

The next step is to work with farmers and other industry partners to develop a firm plan on how our sector can capture this potential value for New Zealand. There is a window of opportunity for New Zealand to take the lead and capture the value but there will be others also seeking to define regenerative agriculture and capture value on their terms, so we have to work together and move fast.



A note about this summary

This document summarises the two reports produced by Alpha Foods – as the research focused on the United States, the United Kingdom and Germany, those reports by necessity contain a strong international focus. B+LNZ has chosen to focus on information and findings most relevant to New Zealand in this summary and has added New Zealand-specific information where necessary.

Phase 1 summary: **Market scan**

The first phase of research sought to understand the current state of the regenerative agriculture movement from the perspective of food brands, retailers, scientists, producers, foodservice and other leaders and constituents across the food value chain.

Alpha Foods' report synthesised over 50 interviews and key research on the most prominent initiatives to date on regenerative agriculture in the United States, Germany and the United Kingdom.

They distilled the findings into the following seven key themes. While there are nuances in how each theme manifests itself in the different countries investigated, all seven themes rang true throughout the research.

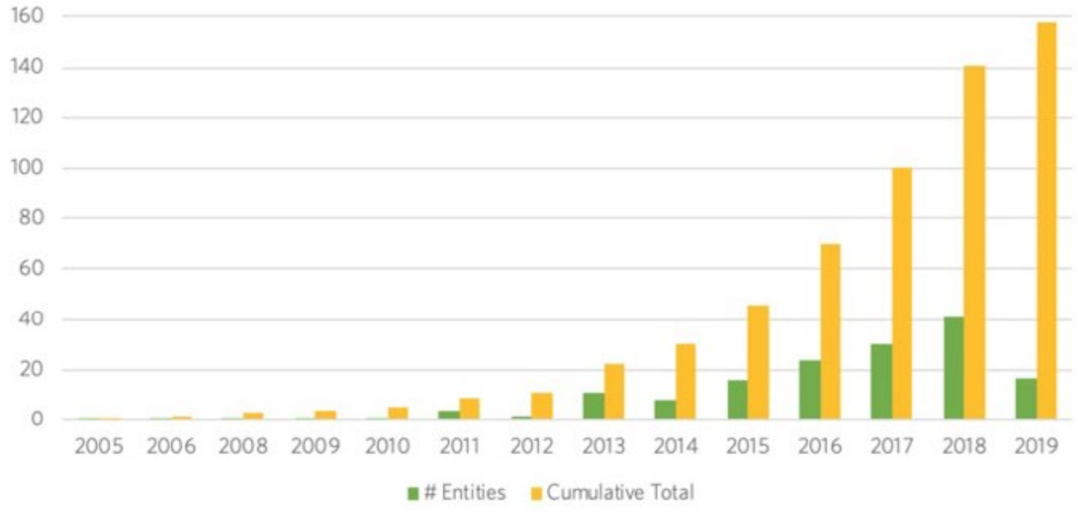
Alpha Foods say that understanding and addressing these seven key themes will be useful in creating a smart regenerative agriculture strategy and increasing the likelihood that food producers can positively impact people, the planet and their profit.

Grassroots movement is leading, brands following, consumers lagging behind

The term 'regenerative agriculture' originated more than 30 years ago but has recently experienced a significant rise in public interest. Global consumer goods companies and nonprofits are creating greater visibility, as are documentaries such as Netflix's Kiss the Ground. Companies such as General Mills, Target and McDonalds are investing in regenerative agriculture.

> ***"Having written about regenerative agriculture for five years now, I've never seen such engagement or our stories about this ultra-sustainable method of farming perform so well" -*** editor of AgFunderNews, Louisa Burwood Taylor.

The graph below highlights the number and cumulative total of entities starting to use the term 'Regenerative Agriculture' by year, globally (such as in public-facing communications).



Source: Ethan Soloviev, Food System Investing in a Regenerative Economy, Global number of entities using the term 'Regenerative Agriculture' or 'Regenerative Farming'. Medium, 2020.

Alpha Foods notes that achieving the transition from conventional to regenerative agriculture will require a major shift in the strategy and behaviour of many producers internationally, because for a farmer or ranchers, farming for healthy soils ecosystems, communities and climate conflicts at many points with conventional agriculture practice.

However, they note that across the globe, farmers are leading the way on the transition to regenerative agriculture, with others following their lead.

In the past three years alone, tech startups, major food companies and business leaders have started to recognise the need to set sustainability targets and invest in practices that support agricultural resilience.

Major food companies, in particular, have started to make substantial investments in helping farmers adopt 'regenerative practices'.

Some of the companies leading the charge in terms of the transition to a regenerative model include the likes of Hormel's Applegate brand, PepsiCo, JBS, Cargill, White Oak Pastures, Epic Provisions, Organic Valley, Danone, General Mills' Annie's brand, Cotswold Seeds, The Ethical Butcher. Within New Zealand we've seen Merino NZ and their ZQRX regenerative index for merino wool.

General Mills has committed to advance regenerative agriculture practices on one million acres of farmland by 2030, as well as committing to achieving net zero emissions by 2050, more than half of which will come from the agriculture practices in its supply chain.

> ***"Our business case for sustainability overall is inextricably linked to the health of the planet and farming communities. As we look out over the next 50 years, there are a lot of reasons to be concerned about the decline of our planetary system and the decline of farming communities. Looking at the viability of our supply chain, and specifically, the regenerative agricultural work we've been doing, there are very few catalysts that make a difference in so many areas all at the same time like regenerative agriculture" -*** Christina Skonberg, senior sustainability analyst at General Mills.

1.1. However, consumers and science are lagging

While early adopters and brands are catching on quickly, the reality is even educated consumers have a hard time grasping what regenerative agriculture means (this is explored in more depth in the Consumer Insights part of this report).

It is difficult for non-farmers to understand complex production related topics such as soil health, habitat recovery, nutrient density, crop rotation and carbon sequestration (or feel it is even relevant).

B+LNZ has been tracking the volume of mentions of regenerative agriculture in the United States in the preceding five quarters. While there has been an uptick in conversations happening, regenerative agriculture still registers lower than other concerns linked to food production people discuss – such as animal welfare or the use of antibiotics. The following graph shows the mentions of 'regenerative agriculture' increasing, and the sentiment relating to it in those conversations.

Source: Quantiful social media tracking mentions of 'Regenerative Agriculture', by Quarter.
Green = positive sentiment, red = negative, grey = neutral.

Beyond consumers, many policymakers also lack a comprehensive understanding of these topics. Throughout the research, public policies such as the United States' subsidised federal crop insurance program were identified as one of the single biggest barriers to transitioning to a regenerative system.

Alpha Foods also note that in countries such as the United States, a significant portion of the agricultural science is influenced, and even funded by, the agriculture industry, potentially limiting the scope for research into widespread changes.

Within New Zealand, more work is needed to give regenerative agriculture solid scientific foundations. This was highlighted by the recent white paper published by Our Land and Water, Regenerative Agriculture in Aotearoa New Zealand – Research Pathways to Build Science-Based Evidence and National Narratives, which set out 17 priority research topics and introduced 11 principles for regenerative farming in New Zealand.

Also within New Zealand:

- The Primary Sector Council has championed regenerative agriculture, supported by modern science and technology, to evolve our agricultural production systems.
- Regenerative farming groups such as Quorum Sense have seen substantial growth facilitating, sharing and leading practical conversations around implementing regenerative practices on farm.
- The Ministry for Primary Industries' technical advisory group has developed a set of regenerative principles to codify what regenerative agriculture is from a New Zealand standpoint.
- Our Land and Water have released blueprints setting out the areas of need within regenerative agriculture to conduct further scientific investigation.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- Regenerative agriculture, as a concept and a trend, isn't going away. It is going to feed into major brands' actions and narratives over the coming years and will quickly filter through into consumer consciousness.
- As many of our sheep and beef production systems are close to widely accepted definitions of what regenerative systems should look like, we need to take this opportunity to:
  - highlight what we do and start talking about how far along we as a country are on our regenerative journey
  - understand any gaps where we don't meet the definitions, and test whether adopting such practices will lead to better outcomes – this includes the scientific gaps outlined in the recent Our Land and Water white paper.

A unified narrative is needed: highlighting the multi-benefits of regenerative agriculture

One of the main challenges to realising the regenerative agriculture opportunity is that 'regenerative' itself lacks a clear definition. Regenerative agriculture has its origins in the United States and as a response to severely degraded soils from intensive cropping. Over the last few years the conversation about what regenerative agriculture is has shifted considerably and broadened out. It means different things in different countries.

Most of the proponents spoken to in the market scan identified regenerative agriculture as including:

- tilling the soil less, or avoiding tilling altogether
- planting cover crops or growing a diverse array of crops
- managed-grazing practices
- targeted (or minimal) use of fertilisers

with all of these practices seeking to improve soil health and carbon stocks.

Some say these are just a baseline and should be part of a greater sustainable farming system that goes beyond soil health.

In the absence of clear definitions and shared understanding, there is concern that the term will be greenwashed or co-opted by brands or businesses in bad faith. There has already been backlash against some companies' use of terms such as 'regenerative company'.

This puts the onus on New Zealand to move quickly and take this leadership space. Our inability to work jointly on shared definition and communication has been costly in the past. One such example has been the definition of grass-fed in the US market where New Zealand lost significant ground to competitors who widened the definition substantially and therefore nullified a potential competitive advantage for our red meat sector.

Alpha Foods note that until there is a broader understanding and supply chain of regenerative agriculture, most of the brands, retailers, producers and companies they spoke with are not actually going to be using the word 'regenerative' on their products or public-facing materials.

2.1 Highlighting both the ecological and social benefits is critical

Many people, when talking about and referring to regenerative agriculture, tend to focus on the ecological outcomes, and soil carbon outcomes in particular. The social and cultural outcomes of practising regenerative agriculture, however, are arguably just as critical to incorporate into any narrative, set of principles or definition but not at the expense of ecological outcomes.

> ***"By sticking to principles not practices, that's the way we ensure good ecological outcomes and how we win this battle. A principles approach where ag is net positive on ecosystem benefits like soil, water, etc. Focussing on ag that not only provides food, but ag that can regenerate the resources from where that food comes from. We don't think that defining regenerative agriculture as just a soil carbon thing is enough, it needs to be a broader outcomes approach"*** - Dr Fabrice DeClerck – Science Director, EAT (United Kingdom).

2.2 Acknowledging the indigenous roots of practices

Alpha Foods notes that regenerative farming has been generationally maintained by individuals, groups and cultures who have felt marginalised in traditional definitions of agriculture.

Within New Zealand, we must ensure partnership with Māori to define regenerative and associated practices. The Primary Sector Council identified Te Taiao (essentially the interconnectedness of the natural environment and people) as the most appropriate expression of regenerative in a New Zealand context.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- The work of the MPI technical advisory group in defining what regenerative means in a New Zealand context is incredibly important. We support the broad description that MPI has developed because it allows us to have a shared understanding of what it means when we discuss it as producers locally, and also something to point to when promoting our products internationally.
- We need to honour mātauranga Māori, Te Ao Māori and Māori agricultural systems: any definitions or narratives around regenerative need to be based on a partnership with Māori at the outset.
- Sheep and beef farmers need to be seen as the heroes of the movement – for regenerative agriculture to proliferate and succeed, the narratives and standards must be producer-led and producer-focused.
- We should focus our narratives on doing more good, not just doing less harm. This is the key difference between other definitions of sustainable agriculture and regenerative agriculture.
- We need to make the complex simple - identify opportunities to distil complicated narratives around regenerative agriculture into marketing pieces that consumers can understand and galvanise around.

Certification Catch-22

There is a tension across proponents and leaders of regenerative agriculture, especially among producers, around whether certification will play a significant role in driving the adoption of regenerative agriculture and what type of certification will truly allow for the growth of a system that is seeking to constantly improve and regenerate itself over time and across varying ecosystems.

Most agree, however, that for the 'regenerative' term to have any real meaning, and to avoid the risk of being greenwashed, there needs to be some set understandings and/or definitions of the term – but most also agree that certification is not going to drive the transformation to and adoption of regenerative agriculture.

Certification will however come into play for those who need to verify claims and outcomes, which is especially relevant for major brands and companies that want to make regenerative claims on their products and across their supply chains.

There are multiple regenerative auditing bodies emerging to develop regenerative certifications. Two of the more high-profile certification bodies are:

- Rodale Institute's Regenerative Organic Certification (ROC): in 2018, a California-based non-profit – formed by the Rodale Institute, Dr Bronner's and Patagonia – launched the ROC, which includes multiple tiers and a focus on animal welfare and social fairness in addition to soil health.
- Savory Institute's Ecological Outcome Verification (EOV): this certification has been developed in collaboration with scientists and researchers around the world and is an empirical and scalable soil and landscape assessment methodology that tracks outcomes in soil health, biodiversity and ecosystem function. It is currently available in the United States and is just launching in the United Kingdom and Germany, and is being trialled in New Zealand by companies and individuals.

There are other examples of certification bodies that, while not purely regenerative, embody some of the regenerative principles e.g. Bioland, the largest organic food association in Germany, whose guidelines are based on seven principles, including cultivating a circular economy, promoting soil fertility, animal welfare, no pesticides or genetically modified organisms.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- We need to have a verifiable standard to link in with international supply chains. As mentioned, it is an advantage that MPI have already completed work around a shared set of principles for the primary sector, but we need to customise this for the sheep and beef sector.
- We believe that NZFAP and NZFAP plus provides a standard that could underpin a "regenerative" claim in the market place for sheep and beef farmers and companies.
- We should examine the value of aligning our farm assurance programmes like NZFAP and NZFAP plus with international certifications that already exist, especially ones such as the ROC and EOV. Alignment could make it easier for international supply chains to understand the farming practices that underpin our standard (and verify they are regenerative).
- Beyond this, any standards that are developed must be producer-led and -designed. Outcomes-based standards or principles must allow for continued improvement over time within the widely varying farm systems in our sector.

Regenerative agriculture is local

One of the key principles of regenerative agriculture, as described by Ethan Soloviev, the chief innovation officer of HowGood, is the ability to *"express the essence of place– its irreducible uniqueness or singularity, akin to a bioregional fingerprint or terroir, that arises from its socio-cultural-ecological-economic distinctiveness".*

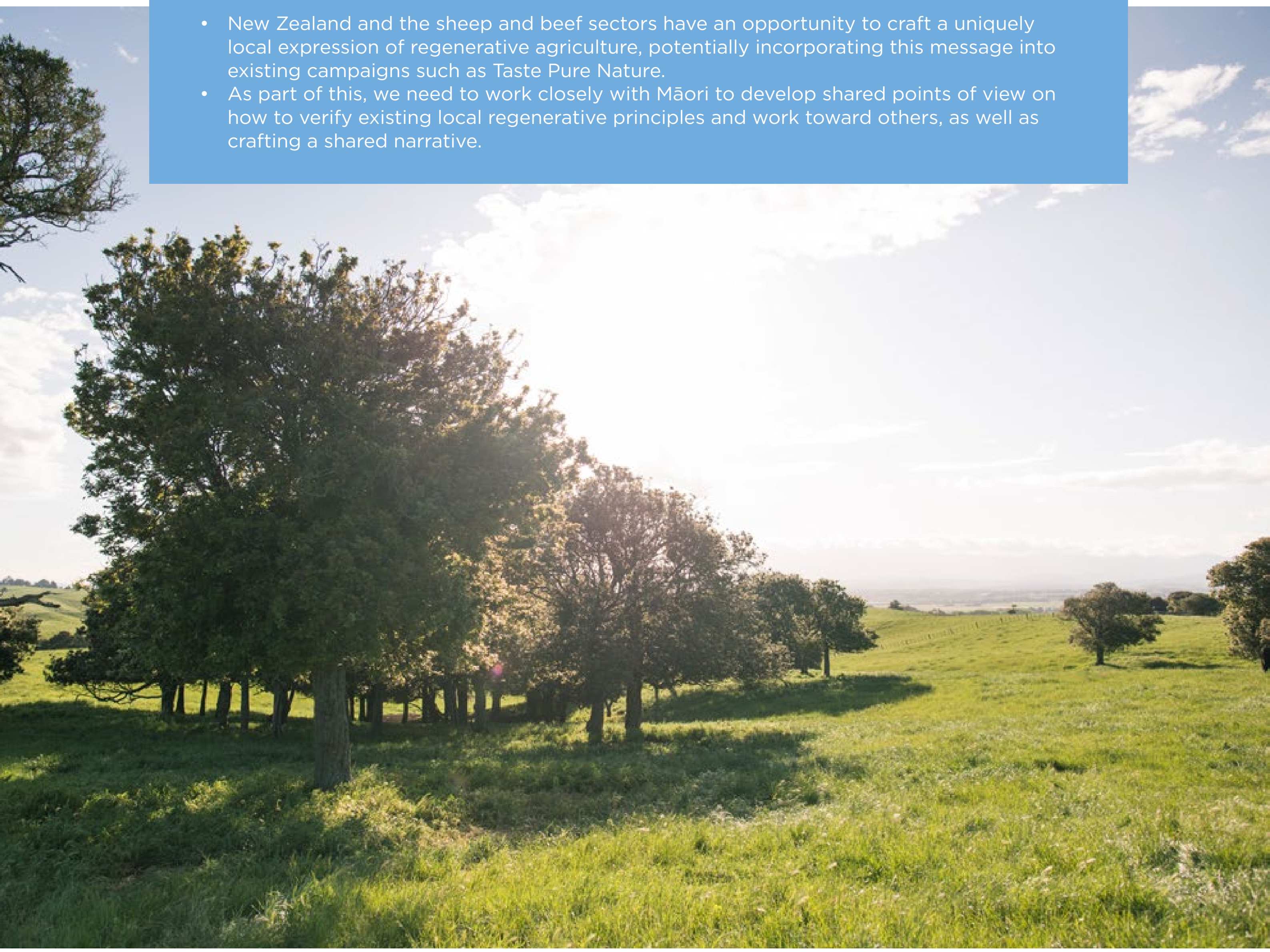
Accordingly, Soloviev and his colleagues argue that a single definition or set of practices would in fact be a barrier to agriculture working in harmony with the natural world.

> ***"Each community of practitioners in each bioregion of the world has the opportunity to re-generate the ecocultural meaning of 'regenerative agriculture'"*** – Ethan Soloviev.

Most stakeholders Alpha Foods interviewed echoed the sentiment that regenerative agriculture will vary from place to place. The ecosystem of each farm differs, as well as the cultural and social contexts; as such, no one set of practices can be applied universally.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- New Zealand and the sheep and beef sectors have an opportunity to craft a uniquely local expression of regenerative agriculture, potentially incorporating this message into existing campaigns such as Taste Pure Nature.
- As part of this, we need to work closely with Māori to develop shared points of view on how to verify existing local regenerative principles and work toward others, as well as crafting a shared narrative.



Healthy soil, healthy food, healthy people continuum will be key

This theme relates more directly to crops – however it is a consideration for other parts of the agricultural industry in New Zealand.

If the science were able to show an increase in the nutrient density of foods produced following 'regenerative agriculture' principles, this would likely be a major tipping point for many in the proliferation of the movement, especially for consumers.

Experts in the United States, United Kingdom and Germany all believe that soil microbes and the health of the soil have a big impact on the nutritional content of our food.

Moreover, the plants we eat and the dirt we come in contact with may also directly fortify our gut microbiomes. The discovery of this link between soil health and human health has commanded the attention of big food companies, farmers, scientists and environmental organisations, and has sparked a research boom that may soon tell us whether soil microbes are as important to our longevity as daily exercise and a restful night's sleep.

Established in 2010 with a mission to increase quality in the food supply, the Bionutrient Food Association (BFA) is the preeminent organisation working globally to promote the importance of focusing on nutrient density. As it further develops empirical definitions of nutrient density, and consumer technology that could enable in-store quality measurement, the BFA could play a much larger role in the food system moving forward.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- Measuring the nutrient density of foods grown or raised regeneratively in New Zealand and marketing the health aspects of this food will help consumers begin to correlate that healthy soil leads to healthy food, which leads to healthy people and communities. Evidencing this connection could help grow demand for regenerative agriculture products and ingredients.
- New Zealand has an opportunity to take a leadership role in developing the science and data that will further establish this connection between soil and human health. B+LNZ in partnership with the Meat Industry Association and several New Zealand processors are involved in research looking at the difference between pasture-raised and grain-fed beef, and alternative proteins, on human health and digestion – exploring the impact specifically of 'regeneratively produced' red meat (once we settle on an agreed definition) as an extension of this should be a priority.

Re-investment necessary in market and supply chain infrastructure gaps

This theme in general is more relevant to other countries but it has implications for New Zealand.

In many countries, the food and agriculture infrastructure is too fragmented in its current state to support regenerative agriculture. Infrastructure in countries like the United States is set up to largely support high-yield mono-culture cropping and feedlot livestock systems.

Over 85 percent of the beef sold in the United States is processed by four companies, leaving the supply chain especially vulnerable to interruptions. Companies consolidate animals into concentrated animal feeding operations and process them in large plants that utilise fast line speeds and cheap labour, resulting in meat that is significantly cheaper than meat from independent producers (by a factor of two to five times).

The COVID-19 pandemic has further shaken the food system. During the height of the economic shutdown and outbreaks of coronavirus hotspots, conventional supply chains have faltered, both in maintaining supplies of products to customers and pivoting to address new market norms in a time of physical distancing. Local, regional and regenerative food systems have been more resilient.

In the United Kingdom and Germany, where farm subsidies provide a large part of incomes, many farmers are deeply rooted in a system that incentivises certain behaviours that are quite rigid.

> ***"[Many farmers are] fighting for their lives and they have no room to innovate and do something different… The bank is not going to care if you want more animal welfare or something – they just need the debt paid for your big operation needs… So it's really hard to get unstuck from this system financially, emotionally and psychologically"*** -
> German farmer Benedikt Bösel, of Gut & Bösel.

In our view, this distorts the market and means that producers are far more distant from consumer signals – which leads to a lack of innovation or focus on producing for what the consumer or market actually wants.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- New Zealand's unsubsidised and more nimble farming system has an advantage in that it is more closely tied to market signals, and can react to those signals, should the supply chain or consumers ask for regenerative production. This could give us an advantage internationally.

De-risking the transition for farmers

Farmers are essential workers within the economy, yet often feel undervalued and unsupported – especially those invested in environmentally and socially responsible practices.

In order to support farmers to learn about, plan, implement and monitor regenerative and climate-smart practices, Alpha Foods note technical assistance programmes (including outreach, education, implementation assistance) are necessary. B+LNZ notes this is consistent with approaches we take in New Zealand and B+LNZ and has the infrastructure to support this, including its extension activities, Action Groups, support for catchment communities and the like.

7.1 Providing flexible, patient capital during transition

Investment in sustainable agriculture is constrained by several barriers. These barriers include the multi-year timeframe for soil health practices to deliver financial value, the prevalence of agriculture financial structures that favour conventional practices, a lack of market premiums for sustainably produced crops and a lack of pricing for environmental benefits. Understanding these barriers and how they constrain investment in sustainable agricultural models is essential to developing solutions that address these barriers.

There is evidence this is starting to change, certainly within New Zealand, with the development of programmes such as the Sustainable Agriculture Finance Initiative (SAFI). SAFI has been designed to bridge the gap between international and domestic standards for sustainable agriculture, and better support the flow of sustainable finance to the New Zealand agriculture sector. In future, sustainable production may be a baseline for access to preferential interest rates or capital.

7.2 Rewarding ecosystem services: ecosystem service payments

Agricultural landscapes offer much more value than just the products they grow. Regenerative land stewardship by farmers influences the levels of biodiversity, carbon sequestration, nutrient cycling and water quality, as well as other ecosystem services. Recognising farmers' full contribution to society as land stewards and food and fibre providers can address climate change and strengthen rural communities to thrive both economically and ecologically.

Financial compensations for environmental conservation means fundamentally rethinking value; shifting away from least-cost models to those that fairly reward stewardship and take account of long-term risk.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- There is a need to help the consumer understand and value wider benefits and capture that through price.
- Supporting and fast-tracking programmes such as SAFI will be key for supporting sheep and beef farmers and those along the value chain to adopt regenerative production and promotion. It will also guarantee access to the most competitively priced capital for the sheep and beef sector now and into the future.
- More generally, on-the-ground activities such as farm plans can capture the current state of farms and help to verify regenerative activities (NZFAP plus is one way of doing this) - while also identifying gaps to help transition to regenerative practices. Catchment community groups are also a way to ensure effective sustainable management of waterways, and help regenerate those that are in poor condition (this is already well underway).
- Continued advocacy to ensure wider society understands, values and recognises the ecosystem services provided by farmers, whether by policy frameworks or other means, is important.

Phase 2 summary: **Consumer research**

Following on from the market scan and expert feedback, Alpha Foods conducted consumer research to understand consumer views around regenerative agriculture. Specifically, they wanted to understand:

- consumer awareness of and associations with regenerative agriculture, including:
  - who or what is driving their understanding?
  - who, if anyone, do they most strongly associate with regenerative agriculture or having strong sustainability credibility?
  - which brands do they most associate with regenerative agriculture?
- drivers of food choices and where sustainability sits
- willingness to pay more – specifically for regeneratively produced food
- attitudes towards New Zealand
- what appeals most about regenerative agriculture, including:
  - barriers to adoption/dissenting viewpoints
- preferred communication and narrative approaches.

Alpha Foods recruited research participants in the United States, United Kingdom and Germany, narrowing from hundreds of respondents to the final set of at least 40 in each country (133 total). The approach was qualitative/small sample as they wanted to understand the nuance of reactions to regenerative as a concept (and awareness about it is relatively low among consumers). The numbers quoted are therefore directional and not representative, but they give strong indications of the target consumer preferences.

The respondents represented a broad mix of age (25-75) and income (USD 25k to 150k equivalent household income per annum), with allowances for singles and families, an even split of men and women, and mixes of ethnicity, education and employment status.

All participants were omnivores. Alpha Foods overlaid B+LNZ's consumer segmentation – with two thirds of participants falling into the target segment 'Conscious Foodies' – consumers who are more mindful of what they eat and interested in food sustainability with the remainder falling into those who make less values based, and more pragmatic decisions about their food.

Alpha Foods identified six key findings across the research.

Consumers are primed for engagement in the regenerative agriculture revolution

While only a minority of respondents have heard of regenerative agriculture, the existing awareness is promising given it's a trend in its infancy.

Of the total participants in the study, across the three countries, 39 percent have heard of regenerative agriculture. The trend, however, is growing with an observable increase in the discussion and mentions on social media.

Germany has the highest percentage who have heard of regenerative agriculture (44 percent), compared with the United States, which has the lowest percentage who have heard of it (36 percent). In the United Kingdom, 37 percent had heard of it.

Currently, there are no strong individuals, organisations, or countries that own the regenerative agriculture narrative in the eyes of the consumer.

When Alpha Foods asked participants 'Which individuals or organisations, if any, do you most strongly associate with regenerative agriculture, or as having strong sustainability credibility?' by far the most common answer was some version of 'none', 'not sure', or 'no one'. This was the case among nearly half the participants in all three countries.

Climate change and water issues were the regenerative agriculture-related environmental issues with the highest awareness across all three countries.

> ***"I heard about it from a friend. I think it's a responsible way to farm and will really help the planet long term if implemented. My first reaction was that I was pleased there were measures to counteract global warming and that I want to support it"*** - David B, 32, Manchester, United Kingdom.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- This highlights that while our target market has some awareness regenerative food and production, they don't know a lot. However, the market scan showed businesses and brands building regenerative into their products and communications, so this lack of knowledge won't last for long.
- Given the natural alignment of our sheep and beef farming systems with the tenets of regenerative production, New Zealand is at a natural advantage for producing and talking about regenerative production – but we need to start now, before other markets start doing this.
  - B+LNZ sees building a regenerative story into Taste Pure Nature as a priority once we verify which production practices would sit under a local definition of regenerative, and the gaps we need to close.
  - We see a job to be done communicating this locally (to support our sustainable, best-in-class farming narrative among New Zealanders) at the same time as supporting our messaging and branding overseas.
- Tactically, the regenerative conversation may be best initiated by highlighting the connections between regenerative agriculture and climate change, which was far and away the most familiar environmental topic for respondents.
  - This also highlights a need to look at how we measure and report on soil carbon sequestration and retention in New Zealand so we can back up any claims around our sheep and beef farming systems having positive links to climate change. Research is currently taking place to better understand soil carbon in New Zealand – with the Alpha Foods research showing overseas consumers care about this issue, the need for this research is particularly reinforced.

Regenerative agriculture can be the win-win-win for taste-health-planet that consumers are seeking

When respondents were asked to rank taste, health, cost, environmental sustainability and social factors in order of importance when making a food choice – across all three countries, and as is consistent with data from many other consumer insights reports – taste and health were at the top of the list of factors that drive food choices. Taste has a wide margin as #1.

Environment most commonly ranked #3 in the United States and United Kingdom, while it most commonly ranked #4 in Germany. There is a big gulf between the top two factors (taste and health) and environment. Alpha Foods note it's not that consumers don't care about the environment; they just don't care about it as much as they care about all these other important factors.

However, across all three countries, there was a clear baseline perception that more sustainably produced beef and lamb is better for health than conventionally produced beef and lamb. As the #2 stated driver of food choices, there is an opportunity to drive demand for beef and lamb from regenerative agriculture by highlighting its health benefits.

The top three health-related issues were the same in all three countries (just in a different order)

1. Eating for immunity and overall health (#1 in the United States and United Kingdom, #2 in Germany)
2. Maintaining a healthy weight (#1 in Germany, #2 in United Kingdom, #3 in the United States)
3. Nutrient density (#2 in the United States, #3 in the United Kingdom and Germany)

Alpha Foods also explored social issues and their relationship with food production, as we know the health and wellbeing of communities are also a key element of regenerative production. Ensuring workers are treated well, and paid well for what they do, will also be a key part of both production and the narrative stemming from it.

The top three social issues are the same in all three countries (just a different order)

1. How fairly workers were paid in producing my food (#1 in the United Kingdom and Germany, #3 in the United States)
2. How humanely workers were treated in producing my food (#1 in the United States, #2 in the United Kingdom and Germany)
3. Impact of producing the food on communities living nearby (i.e., the air quality or drinking wells) (#2 in the United States, #3 in the United Kingdom and Germany)

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- While we need to deliver environmental excellence through regenerative sheep and beef production, if we can prove health and taste benefits scientifically and experientially, this will drive and shape consumer preference.
  - Funding science into the health benefits of regenerative meat from New Zealand, as well as taste comparisons between regeneratively produced meat and conventionally produced should be a priority to align with what consumers prioritise when purchasing.
- Regenerative agriculture's relatively more proven environmental benefits can be leveraged once we verify practice on farm and close any gaps – although ultimately it is ranks lower as a priority even for our more particular 'Conscious Foodie' consumers.

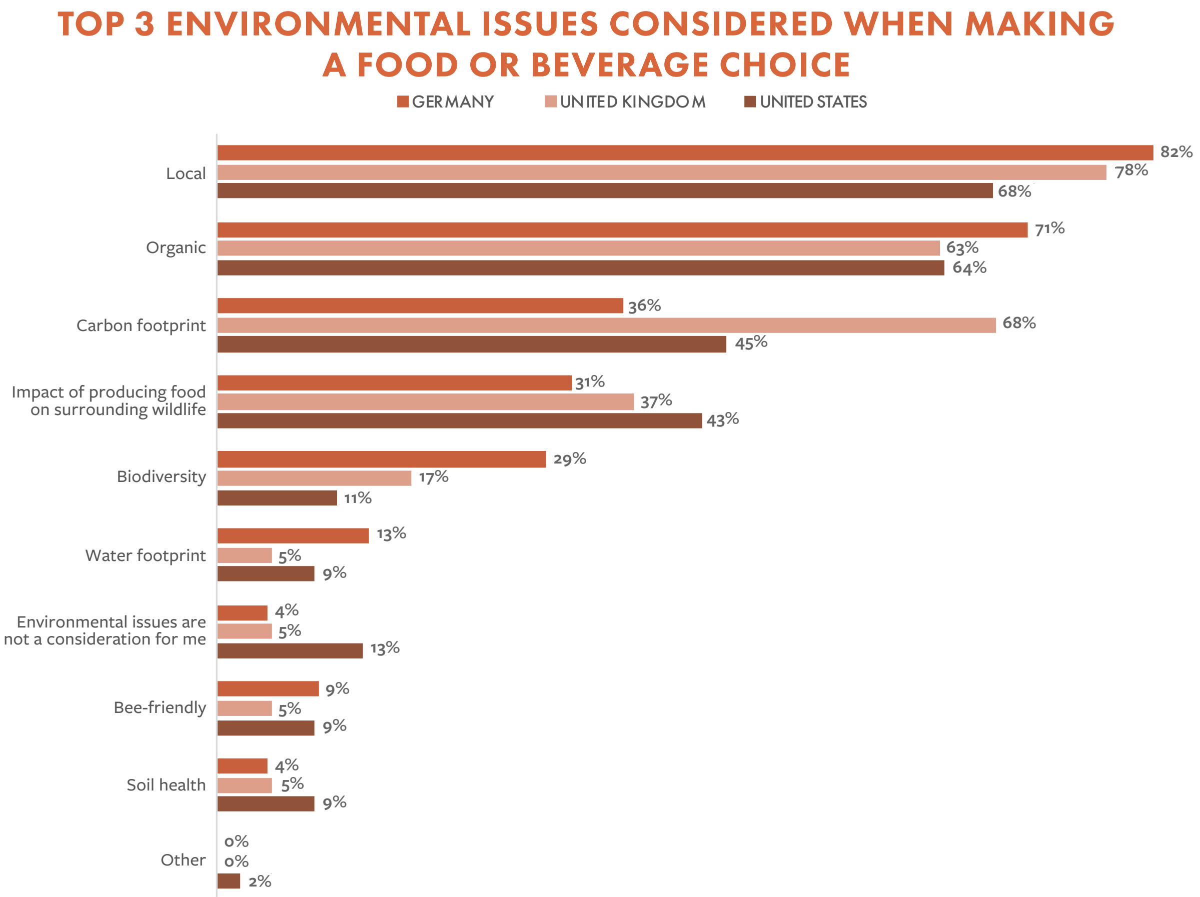
Preference for local may present a challenge for New Zealand

Among the environmental issues consumers care about, climate change is at the very top followed by organic production, carbon footprints and impacts on surrounding wildlife.

'Local' is a proxy for community, trust, sustainability and health.

Across all three countries, a high proportion of people prefer to purchase locally produced food when it is easily available and economical. Locally produced food is viewed by many as a proxy for healthier, tastier food that also supports local economies, is more environmentally sustainable and more ethical.

Across all three countries a higher value was also placed on locally produced food. Many people referenced the COVID-19 pandemic as a driver for shopping locally. It remains to be seen how long that increased preference will last.



"I used to buy local milk, and I don't have a good [or economical] resource for that now, so I kind of take the approach that I do the things that I know I can do well and that make a difference, like buying good meat and good eggs. I try to get local eggs when I can from local people who are selling them. How the animals are treated, as much as I can I try to take that in consideration for my meat choices... Some of it is just trusting the brand and the grocery store, because there's so much that we as consumers can't research" – Grace G, 36, Hickman, NE, United States.

On the one hand, the preference for local can present a significant challenge when marketing regenerative agriculture foods in countries that are significant distances from where they were produced. On the other hand, having this clear and consistent understanding of the deeper-seated values and attributes (community, trust, sustainability and health) for which local is a proxy can actually enable producers to target those values and attributes at their root.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

As sheep and beef exporters distant from our largest markets, arguments around food miles and preference for locally sourced products are nothing new to New Zealand. However, it is a reminder that we need to continue to do the following.

- Verify the sustainability of our farming systems, have systems to verify where we are producing regeneratively already, and where the gaps are to close, and offer head-to-head comparisons to local production systems in the markets we export to.
- Educate about the relative carbon efficiency of New Zealand farmers versus international markets, and about the disproportionate carbon footprint impact of production practices over the relatively small carbon footprint of food miles (for transportation by ship).
- Continue to build our Taste Pure Nature campaign globally, while incorporating a regenerative story, for elements where we already farm regeneratively, again, as a visual/emotional comparator towards local, non-regenerative production systems in other markets.

People will pay more for regenerative agriculture and sustainably produced food – and even more once they learn more about it

Across all three countries, at baseline, the majority of people in the study would pay an average of 20 percent more for sustainably produced foods.

57 percent in the United States would pay this premium
40 percent in Germany would pay this premium
36 percent in the United Kingdom would pay this premium

When considering these figures, it's important to remember that Alpha Foods deliberately recruited the 'Conscious Foodie' target for this study, who have a heighted interest in environmental issues versus the general population.

When respondents were provided with further education about regenerative agriculture, the willingness to pay more increased.

After learning about the benefits of regenerative agriculture, the proportion of consumers willing to pay 20 percent or more increased in the United Kingdom and Germany, as well as the proportion willing to pay *substantially* more (i.e. 30 percent more) at least for the United States and Germany.

		Before learning about regenerative agriculture	After learning about regenerative agriculture
Proportion willing to pay 20% more for sustainably produced food	United Kingdom	36%	56%
	Germany	40%	42%
Proportion willing to pay 30% more for sustainably produced food	United States	23%	39%
	Germany	29%	35%

Alpha Foods note that it didn't take much – either in quantity of content or in amount of time needed by end users – in order to learn enough information to make a difference in terms of willingness to pay. They also note that there's potential to leverage the finding that sustainably produced food is perceived as healthier.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

As a headline, any increase in willingness to pay more is encouraging. However, consumers internationally can behave differently in the real world – when weighed against factors like taste or health, an actual willingness to pay more can be difficult to achieve. That said, to ensure New Zealand's sheep and beef sector has the best chance of realising this upside we need to do the following.

- Educate consumers generally about what New Zealand's definition of regenerative is and why they should care about it.
- Continue to educate people on New Zealand production practices for beef and lamb, highlighting where they already are regenerative and where we are closing the gap.
- Get moving early to craft New Zealand sheep and beef farmers' narratives early and put our stake in the ground internationally to maximise the value we can extract here.
    - Again, embedding regenerative within Taste Pure Nature would make sense as a vehicle because the framework is already there to support a regenerative story.
- Ensure we have verification systems in place to back up when we are asking for higher prices – important for consumers, but equally if not more important when we are engaging with wholesalers and importers.
    - B+LNZ sees NZFAP plus as a potential system to deliver this due to the fact it measures and provides improvement targets for key elements of regenerative agriculture.

The pull of purpose and personal benefits for paying a premium

A sense of global citizenship and collective responsibility, perceived health benefits, the power of voting with your dollar and reversing the climate crisis were the key drivers of willingness to pay more across all three countries.

Across all three countries, among those willing to pay significantly more (20 percent, 30 percent or 40 percent or more), several key themes emerged about why:

- That it can deliver to fundamental needs around taste and eating experience.
- Sense of global citizenship and collective responsibility: the repeated theme of 'doing my part', both to fellow citizens globally but especially to future generations, as well as for the sake of the planet we share.
- Reversing our climate crisis: having witnessed the impacts of climate change, such as extreme weather, and feeling that individual action must be taken, given it's an issue at our doorsteps, not a hypothetical future threat.
- Voting with your dollar: 'putting my money where my mouth is' came up several times. There was a sense among several participants that it's not enough to say you care about climate change or sustainability – you have to demonstrate that you care through the foods and beverages you purchase.
- Perceived health benefits: many perceive the co-benefit of avoiding junk and gaining healthier, purer foods to put in one's body when choosing and paying more for sustainable options.

> ***"To me sustainability means consuming or using resources to meet my own needs, but in a way that doesn't deplete it for others (human and environment) or for the future. I guess it means being able to do or use things in a more renewable way – 'take just enough, no more and no less' type of idea. I would pay more for sustainable products because it would be for the greater good. It's a more long-term way of living"*** – Diana L, 30, Sacramento, CA, United States.

B+LNZ's view on what this means for New Zealand sheep and beef farmers

- This is really important direction for how we talk about regenerative with consumers. In any communication around regenerative red meat products from New Zealand we need to focus on:
  - The taste of our product, as consumers fundamentally want their meat to taste great.
  - The concept that we're all in this together and the sheep and beef sector in New Zealand is playing its part.
  - New Zealand farming's better environmental stories, and that switching to regeneratively produced red meat from New Zealand is better for the climate.
  - The health benefits of choosing New Zealand red meat (noting that the science needs to back up claims before benefits here can be realised).

6.0 Phase 2 summary: **Consumer research**

Top three communication approaches across all countries matched top drivers of food choices overall – and the need for simplicity

Alpha Foods tested six different communication directions with consumers, looking at ways of talking about and positioning red meat and wine products, which were regeneratively produced in New Zealand. The approaches were mocked up as products, with copy presented as it might appear on the front and back of pack. See example below.

The top three communication approaches that respondents favoured were positive, simple, specific and intuitive: ‘restoring ecosystems and soil health’, ‘addressing the climate crisis’ and ‘providing more nutritious, delicious food’.

Confusion about the term ‘regenerative agriculture’ may be a barrier, as this was cited by approximately a third of respondents across all countries. Giving consumers a concrete definition could help overcome this potential barrier of confusion.

The communication prototypes were mostly hypothetical and included claims about regenerative agriculture in New Zealand that have not yet been supported by data. Some claims were supported by research data outside of New Zealand, but the exercise was primarily focused on understanding consumers’ food decision-making processes and how regenerative agriculture could potentially meet some of those needs. The results of the study provide guidance on how to prioritise and communicate messages about regenerative agriculture but any claims eventually used will need to be backed up by research in a New Zealand context.

The six prototypes were:

- Heal the planet: ‘Regenerate agriculture, regenerate the planet’
- Avoid disaster: ‘Regenerative agriculture: a solution to climate change’
- Sustainable hedonism: ‘Healthier soils mean healthier, tastier food’
- Support a farmer-led movement: ‘Farmers know best’
- Renewal done right: ‘(Re)Generative farming’
- Te Taiao: regenerative agriculture meets Māori culture: ‘Regenerative agriculture in Aotearoa (New Zealand) is Maori agriculture: Te Taiao’.

Reasons for preferring the top three approaches included:

- *Providing more nutritious, delicious food (sustainable hedonism):* the element of fun, not being completely serious, and it has something in it for the consumer.
- *Restoring ecosystems and soil health (heal the planet):* conveys multi-benefits and is holistic, a catchy tagline (including repetition) is memorable.
- *Addressing the climate crisis (avoid disaster):* including reference to ‘solution’ appeals to consumers, who feel part of the narrative (and part of that solution).

B+LNZ’s view on what this means for New Zealand sheep and beef farmers

Similar to what was raised as the rationale for paying more for regeneratively produced food, there is important direction about what we should say about regenerative produced red meat from New Zealand.

- Make sure basic food needs are met first – it tastes great, and is good for you.
- Focus on the positive environmental benefits linked to regenerative production, but also link to health and taste, when we can back this up.
- Ensure descriptions of the benefits of regenerative agriculture that are positive, simple, specific and intuitive.
- Make communications clear, straightforward, simple, relatable and easy for *anyone* to understand – intuitive, even; you instantly ‘get it’. (You don’t have to Google it!)
- Our messaging around regenerative production needs to be credible – not perceived as greenwashing or marketing gimmicks.
- Our messaging should be positive, empowering and presenting a solution – not only presenting regenerative agriculture as a solution but inviting *you*, the consumer, to participate in that solution. They essentially issue a call to action, situating you as a player in the story of the future of food, and in solving the climate emergency.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