



Growing value for New Zealand's Red Meat Industry

Ensuring we build quality & life-long connections with our consumers

David Kidd
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Acknowledgements:

When I embarked on the journey that is a Nuffield Scholarship, I had no real appreciation of the huge number of people who come together to support you on that journey. It is truly a once in a lifetime opportunity that cannot be fully described in a report such as this. Without the support shown to me by family, friends, colleagues and strangers my trip would not have been possible nor as enjoyable.

Firstly thanks to the New Zealand Nuffield Farming Scholarship Trust for their investment in me and the industry that I am passionate about. It is only through gaining the knowledge of our place and position in the supply chain, that we can truly understand the opportunities and challenges that we as an industry face. I hope that I will be able to repay over time, the investment that the Trust has made in me to benefit both the New Zealand agricultural community and New Zealand Inc. as has been done by so many Nuffield Scholars before me.

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About the Author:

David Kidd is a 34 year old beef cattle farmer married to Janine Kidd. Together with their two young daughters Evelyn (2 ½) and Ava (5 months), they manage a 550ha beef finishing operation at Shelly Beach on the South Kaipara Head. Given their unique location on the edge of the harbour, David is very aware of the environmental impact of farming.

I grew up at “Whenuanui”, a 380ha sheep & beef breeding and finishing operation in the Kaipara River valley catchment of the Kaipara Harbour near Helensville. Farming was introduced to me at a young age, as was a love for the natural environment in which we work, value and respect. School holidays were inevitably spent helping out on the farm when I was home from boarding school, and after a year travelling overseas at the end of college I attended Massey University where I studied a Bachelor of Applied Science, majoring in Agriculture.

An interesting and successful career unfolded for me, initially in banking with predominantly NZ dairy farmers as my clients in the South Waikato region. I was then seconded to Western Australia banking primary producers post the farm gate. This gave me insight into rural businesses and the primary sector across the supply chain in quite different economic, climatic and legislative environments.

I returned home in 2012 keen to put to good use several years of farming financial and business experience. I took up my position as Farm Manager on the 550ha block I currently manage, and Janine and I have also taken equity in the farm business that has the operational lease. I have gained a lot from my involvement with Young Farmers and more recently on the Beef & Lamb NZ Farmer Council for the Northern North Island and through the completion of the Kellogg Rural Leadership course in 2015. This has given me a solid foundation to apply my thinking to, and better understand the dynamics, the strengths, the opportunities and inherent challenges now confronting the NZ Red Meat industry & sector.

This diverse experience has prompted my interest and deep concerns that we as NZ farmers continue to focus our resources on production and productivity. I believe our increased and successful focus behind the farm gate has been achieved at considerable expense to us as food producers due to having lost the connection with our NZ & global consumers. I believe our challenge now is to add value to the food that we produce by sharing our unique and compelling story and explaining the process we go through in order to create food for our urbanised consumers throughout the world.

As social media has risen in popularity, it has provided an immediate conduit for negative information to be quickly and effectively disseminated, with little and often no opportunity for a correction of the facts. This can quickly damage reputations & brands and is something that needs to be addressed. Farming has a great story to tell, but we must ensure that this story is consistent and shared collaboratively. The two essential factors I believe that we must focus on include:

- The Environment - ensuring that we leave it in as good or better place than when it was handed to us.
- Animal Welfare - ensuring that animals live under the highest standards whilst in our care.



With these thoughts in-mind, I applied for and was awarded a Nuffield Scholarship. This is the result. Enjoy!



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Executive Summary:

A paradigm shift in the way we farm is occurring, one that emphasises the importance of producing more effectively, efficiently and responsibly, with a particular focus on protecting the environment. New Zealand farmers are confronting these changes now. Our geographic isolation no longer shelters us from the global and instant communication and information networks are now freely available. I believe that our opportunity is to leverage this increased public and consumer awareness of the environment and the growing desire of consumers to understand how their food is produced and where it comes from.

My aim in undertaking this study was to provide a pathway allowing farmers to better connect with consumers. If we are to set NZ product aside from our competitors in-market, it was my view that we needed not only a good story that engaged the consumer, but also a way of ensuring that the consumer can understand the way in which we treat both the animals and the land on which we farm them.

From this study, I believe we have a fantastic opportunity to future proof our businesses across the supply chain and to create a new level of connection with the consumer that will lead to gains in the value of the food we produce over time. As farmers, I believe that we need to step up now and own this as an opportunity. This has to be a 'bottom, up' process where we recognise the value that this will create for us as farmers, as food producers and as an industry over time. We must work together to develop a meaningful connection with the consumers who recognise our food for what it is; sustainably produced to the highest standards for the environment, animals and consumers.

The study commenced with extensive internet research and discussions with key NZ industry figures to understand the current status quo and current goals and initiatives. Initial thoughts were to implement the 'Environmental Sustainability' (such as Origin Green) approach as a means of connecting with the consumer, however this morphed into a wider discussion about what consumers desire from producers as I engaged with manufacturers, importers and distributors around the world. I began to understand that consumer perception is influenced by a number of factors including the manner in which product is presented and the way in which its claims are demonstrated.

Consumers are rightly demanding more knowledge and accountability from their food producers. It is almost mandatory for Country of Origin labelling. Why? Because we as consumers identify that the standards that are met and controls that are in place differ from country to country, and it gives us an idea of whether the food that we are eating is safe. As a small exporting nation that is reliant on the export of agricultural products, we cannot allow ourselves to have any doubt cast on the quality and safety of our produce. As we know, with the power of social media now, the implications of an error in judgement by a single farmer, can lead to challenges in ensuring our produce is accepted by consumers in global markets.

Certification of the farming system from both an environmental and animal welfare perspective gives us a starting point in terms of having a discussion with the consumer. As part of an overall strategy, it allows farmers the opportunity to provide visibility and assurance to our consumers of the production process their food has gone through and the impact of that process on the environment. It also connects consumers with their food 'story', something that has been lost as society has become more urbanised. For farmers, this creates a meaningful way in which we can differentiate our product from other producers. It



also gives an opportunity to connect with the urban population of NZ, to show our commitment to maintaining our social licence to farm by working to improve the environment.

Recommendations:

- Develop a clear and simple national environmental & animal welfare standard that we can own with pride. This standard must provide all farmers an understanding of what is required to enable them to supply their produce with confidence to both NZ & global customers.
- Introduce a farmer led approach to producing food responsibly by embracing minimum acceptable, auditable and transparent animal welfare and environmental standards. These standards must be baselined and measured so they can be progressively reviewed and improved. To be seen as world class we have to create and act at a world class standard behind the farm gate.
- Ensure the minimum accepted standards are complied with. For the greater good of the industry and NZ red meat, we must reward those who step up and comply, with market access to process their produce. As with the dairy sector, non-compliance with accepted minimum standards means no milk collection. The red meat sector needs a bottom line and it will be the courageous processors who stop making exceptions that will lead the way. The meat processor must become our 'customer' not 'just' the abattoir.
- Decide on an overarching NZ food strategy, that producers and manufacturers can support. Upon development of the strategy, we need to create a plan to measure, record and improve upon our initial results, to show our consumers that we are world class at what we do.
- Continue recent efforts of signing up to global accords such as the "Global Roundtable for Sustainable Beef" to bring together NPO's, Processors, Consumer facing businesses and Farmers.



1: Introduction

As farmers, we are food producers. Food is one of the most intimate relationships that we have as humans. It is the fuel we put into our bodies every day. Transparency in the food supply chain is becoming more and more important. We can't afford to be the global supplier with no audit or traceability through our supply chain.

“Clean, Green, 100% New Zealand”. Is this how the world really sees us now? It was a clever marketing slogan designed to “sell” New Zealand (NZ) to tourists in the 1990's but in more recent times has become a “rallying cry” for environmentalist groups to use against NZ farmers. Today, information from any part of the globe is instantly available with social media quick to spread news stories, often with a poorly informed view or adverse perspective. We cannot afford the reputational risk to NZ Inc of detrimental stories about the state of the environment or animal welfare in NZ being carried by the world media and even worse social media, where we will have no chance of redress.

The global ‘premium’ consumer is more discerning. He / she is increasingly aware of the manner and process in which their food is produced. To be world leading in ‘natural’ food production we have to “walk the talk” with authenticity. For NZ farmers, the challenge of being stewards of our land is farming for our children's children. In order to farm in the most environmentally sustainable manner, we must achieve the returns to allow continual business improvement of on farm systems and reinvestment in our environmental heritage. Our products must warrant the extra attention to detail, the time and genuine care that is required. So, how do we achieve it?

The New Zealand (NZ) red meat sector is one of the largest employers of the NZ economy and a major contributor of export GDP earnings. In 2016, the sector contributed in excess of \$8.9b to the NZ economy, or almost 4% of GDP (Westpac Meat & Wool Insights, 2016). However, increasingly this sector and the wider agricultural sector is being closely linked to the success of NZ tourism. This is an opportunity not a threat that needs to be strategically embraced by NZ Inc. Whilst the agricultural sector is predominantly made up of the dairy and red meat producers (sheep & beef), it is intrinsically linked to the increasing focus of animals from the dairy supply chain being utilised by the beef production system. Again, this provides a good opportunity across the supply chain to maximise the value of readily available product. That success has been built on the grass-based and free range nature of NZ farming, which traditionally has been our natural comparative advantage as food producers. In 2017, NZ had approximately 12,150 dairy farms and 25,113 sheep & beef farms, covering a total of 11.743m hectares (Beef & Lamb Compendium, 2017).

New Zealand farm systems have undergone a continuing level of consolidation over the past 20 years resulting in scale and greater operational efficiencies with increased capital and decreasing levels of labour required to operate them. This has decreased the number of staff employed in the sector and decimated many rural communities. With the rapid growth of urban areas, an increasing disconnect with our urban cousins has occurred. The increased pressure on resources for more intensive farming operations now requires us as farmers and food producers to create and maintain a social licence to farm at all times.

Agricultural production worldwide is under increased focus and inspection, as technology and consumer understanding of production practices continues to improve and evolve. Food production is occurring in new and exciting ways, from vertical farming to meat grown in



laboratories and plant based protein. The internet has provided sensational opportunities to connect with consumers and tell the story of individual producers and processors – allowing differentiation in an otherwise convoluted and commoditised marketplace. NZ producers need to ensure that we are at the forefront of this evolution now bordering on a revolution, and produce the product that the global and informed consumer demands. To my mind, that is product which is farmed to the highest environmental and ethical standards. We need a framework to capture and provide that information to the consumer. We don't have one at present.

Consumers today are demanding more information about the environmental impact and the manner in which animals have been raised. There is already a requirement throughout the supply chain to ensure that there are accurate records kept of treatments given and products applied through the production life-cycle. Practices that were once considered 'standard' are no longer acceptable and we must continue to challenge 'best-practice' at all times. While farmers have generally kept records, these will increasingly need to be of an auditable standard. In order to ensure that we are 'front of mind' and 'first choice' when a consumer sees our product for sale, we must endeavour to set the highest standards for environmental sustainability, animal welfare and social responsibility. NZ cannot afford complacency. Its leadership is being challenged by many smart and well capitalised producers, who are often able to challenge the traditional space we have occupied – price. Our niche in these global markets has to be for market leading, best practice, creating respected and valued authentic food.

2: Aims & Objectives

The aims and objectives of this research were to:

- Increase understanding of how producers and consumers can be connected through the supply chain.
- Understand systems that are used to measure and record on-farm production practices and how this could apply to NZ farmers.
- Identify recommendations which will assist with achieving an auditable supply chain, from paddock to plate.

3: Methodology

To achieve the aims and objectives as set out in this research report, the following process was implemented:

- Literature review and web-based research.
- Industry briefing (organised by Nuffield NZ) followed by a series of interviews and discussions with leading NZ Red Meat industry figures.
- Discussion with other Nuffield Scholars at the Nuffield Contemporary Scholars Conference (CSC) and as part of the Global Focus Program (GFP).
- Interviews with a number of leading farmers, processors, retailers and distributors throughout my travels.
- Continued 'desktop' research throughout the year (particularly following interviews) to further learning and knowledge in relevant areas.



4: Findings & Discussion:

4.1: Understanding the Future for NZ.

4.1.1: What is NZ's role in food production? Do we have a strategy?

As the world population continues to increase, as with any production sector, there is a continual need to develop and innovate within the food production model in order to sustain this increase. Our challenge is to determine and understand what our place in this model is. What is the number of people that we 'want' to feed as opposed to the number that we 'can' feed? In short we need to know what and who our target market is. That will determine the consumer for whom we produce quality and safe food.

There is huge potential for increased production from the likes of South America (Rabobank, 2015). With just a tweak or fine tuning the way in which they farm, the inevitable gains from the use of technology will increase their output significantly. Production and increasing outputs is no longer the big game in town. I believe that the drive for food as sustenance is now being more widely challenged by the understanding that food is a source of enjoyment and pleasure. Increasingly, many consumers in different countries are demonstrating a desire for higher quality produce that may or may not be grown locally (Farmonline.com.au, 2017). If our product is positioned correctly, there is an opportunity for increasing both demand and value.

NZ has built a strong reputation as a supplier of safe, quality product that will meet the specifications desired by the buyer. Over time, the processors of NZ meat have diversified the way in which the product is sold to ensure that maximum value is gained in the current state. Now, we share the challenge of developing and ensuring that the 'provenance' of the product provided is consistently communicated well to the consumer.

As 'local' food becomes a more topical issue (Fortune.Com, 2015), we need to decide whether to invest the significant sums required to design and promote consumer brands in the marketplace, or to invest in creating long-term supply relationships within the service industry. With the mix of product that we currently provide, this may allow for more NZ provenance in the finished article, whilst not changing the product that NZ currently supplies. We also need to decide which countries we wish to focus upon. Discussions I had indicated that NZ has at times sought short term gains in price at the expense of longer term growth plans. A flip flop approach chasing price will lead to markets being unable to consistently rely on NZ product. Adopting best practise of building long term supply relationships and brand added value across the supply chain will grow markets and brand reputation and resilience.

Many countries continue to focus on food security from their farming systems. As global trade attempts to break down some of these barriers, a shift in the types of farming systems to better accommodate the climatic conditions in each country will likely occur. This may provide additional opportunities as countries realise that they are not cost competitive when producing certain



products. There is also the role of technology in food production, with examples such as vertical farming, plant based protein and synthetic protein all changing the face of food as we know it. We need to adapt to changing production systems faster than ever, especially those that can produce consistent quality and experience every time.

The challenge for NZ is to decide how we fit into the world food supply chain. NZ needs a national food strategy. For a long period, as food producers on the land, we have focused on producing the products we know we can competitively grow and expecting / depending on others in the supply chain to find a market for us. High production and low cost have been the mantra that we have lived by. The short comings of this are that in many instances we have commoditised our produce. Certainly, based on my experience, this has been the case with red meat. Is there an opportunity to differentiate ourselves now on the quality and provenance of the product to safeguard our position into the future? Based on my travels and research, I think there is.

4.1.2: The future of farming – the world needs food; the challenge is in the how.

In over 5 months of travelling the globe, from the bottom of Chile to the Amazon Biome; Asia to Europe and North America, it is evident that there are huge changes occurring in the way in which we produce and consume food.

“Internationally, over the last 100 years there have been three major shifts in thinking about the production of agricultural commodities;

1. The first was about “producing more”, focusing on increasing production.
2. The second shift was about “producing more, effectively and efficiently”, striving for productivity rather than just production.
3. The third, and current, paradigm emphasises the importance of “producing more, effectively, efficiently and responsibly” with a particular focus on protecting the environment” (Dr Neels Botha, Senior Scientist AgResearch, Rabobank Agribusiness Report 2015).



FOOD PRODUCTION AND AGRICULTURE INTENSIFICATION

TO FEED A GLOBAL POPULATION OF 9.1 BILLION PEOPLE:

Food production will need to increase 70% percent by 2050.

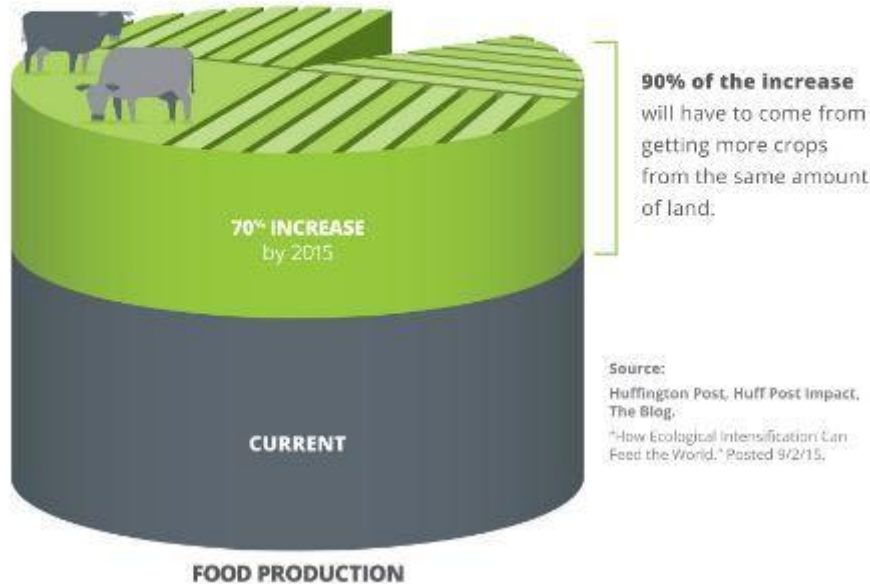


Figure 1: Food Production and Agriculture Intensification
Sourced from GRISB website (2018).

4.1.3: Farming systems around the world

We all farm in unique environments, with different economic, compliance, environmental and social pressures affecting the way in which we operate our businesses. However, generally the focus comes back to production – how do we achieve the most we can from the tools and resources that we have available to us. The following are 3 visits that I found somewhat representative of 3 different markets that I visited:

One of my very first visits on my travels was to attend a large agricultural field day, located not far from **Buenos Aires, Argentina**. The size of the event would be similar or larger than the NZ Field day event held at Mystery Creek each year. What struck me at this event was the amount and the advanced level of technology that is becoming available for farmers to use. With advances in machine technology, farmers are able to monitor water usage across paddocks, vary the rate of application of chemicals, harvest more produce with larger machines while monitoring and managing environmental impact. This is similar to what we see in NZ, but with a focus on the major crops of South America (Soy and Corn in particular); the machines were larger than what we typically see here. There was also a strong focus on the “no-tillage” form of planting, to better manage the climatic risk where rainfall events can seriously damage their soils.

Further on in my travels, I went to see large scale (550 cows) dairy business in the **Netherlands**. This was an incredibly efficient, large scale dairy business



where all cows are housed indoors and robotically milked. The milk from the cows is all processed at their own factory, which makes a range of cheese, milk products and yoghurts for sale predominantly in the Netherlands. End to end production to processing. They encourage consumers to come and see the operation annually through open days to ensure connection with the consumer as well as through their marketing. From an environmental perspective, the operation turns all effluent into gas through a bio-digester system to in turn produce energy to run the plant. The solid material at the end of the digestion process is dried and spread on pastures when environmental conditions dictate.

Of real interest in my discussions in the Netherlands, was the difference in mind set that farmers exhibited. Farmers were largely seen as professionals, with the goal being to create the understanding that “Farmers need consumers, but consumers also need farmers; how do we create conditions that allow both of us to survive and thrive”. There was a real push towards creating open source information, with all production figures being published (allowing consumers to share in the current and future challenges).

Finally, I was able to see the future of fresh vegetable production when visiting a large vertical farming operation in **Japan**. Spread Co was started in 2006 in Kyoto Prefecture, with its first factory opened in 2007. They had perfected the art of growing lettuce varieties in a large warehouse facility, with all conditions monitored and production maximised through understanding and providing exactly what the plant requires while minimising the use of nutrients and energy. The business produces in excess of 21,000 heads of lettuce per day, with a 97% yield of lettuce planted to heads harvested. Due to the controlled nature of the environment, there are no pesticides used, and production could be replicated anywhere in the world.

Of particular interest was that 30% of the cost of running this business was energy, although with their new technology they can reduce this cost by 30% in the new factory they are building. 98% of water used in the business is recycled, with a reduction in water used per lettuce head grown from 10.73l in an outdoor system, to 0.83l in the current system and 0.11l in the new plant which is under construction. Through clever marketing and education of the consumer, they have been able to achieve a 20% price premium from the market (judged as the difference when compared to the price similar lettuce products are sold for); with all packaging proudly stating that this product is grown in a factory.

The question becomes, how do we compete when we are dealing with an animal's metabolism that will only grow so quickly? We are also generally dealing with an environment in which we cannot control the climatic conditions that have a major impact on our ability to grow feed for the animals. While (with careful planning) we can ensure sufficient feed is available even in adverse conditions, this challenge outlines to me why it is so important that we work together as an industry. We need to ensure we have the right genetics available in our animals that ensure good growth as well as a good understanding of how and when we can send them for processing to meet consumer requirements. As farmers, this may mean we have to adapt



our farming system to allow for more consistent supply. In-line with environmental concerns, this may mean we carry less stock, but supply a more consistent and reliable product throughout the year. This then allows the processing industry to adjust capacity to suit a more consistent supply curve.

4.1.4: Understanding the Consumer

As consumer wealth continues to increase, there is a corresponding increase in the number of consumers who buy food based on nutritional, ethical and taste related factors rather than just price. These consumers do not see it as a necessity or a commodity and are willing to spend more on food. They seek to understand the 'provenance story' behind the product they choose to consume. This is becoming more typical with the increase in use of QR codes by producers to link consumer products back to producers websites for further information. There has also been a huge increase in 'meal solution' type companies such as "My Food Bag" or "Blue Apron". These companies place a huge emphasis on understanding the supply chain of their produce and the claims that are made by that product. Generally the consumer purchasing the 'ready meal' or 'prepared meal' option expects to have an authentic food experience with only fresh, natural, supply chain certified product provided.

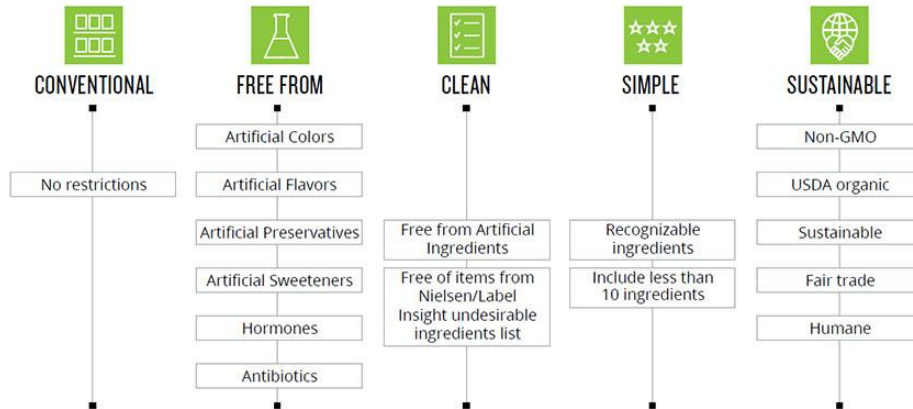
Traditionally there has been little to no product differentiation, with produce placed on the supermarket shelf according to the category within which it 'fits'. In the case of the meat cabinet, this is largely due to muscle type / use of product (i.e. Mince, Casserole Steak (Chuck or Blade), Rump, Sirloin, Eye Fillet etc.). Labelling on the package has been from the supermarket chain. Today however, there is more differentiation of product. Packaging has been improved in both presentation and to present claims to the consumer.

Consumer research has shown a prolific rise in the number of claims and the importance to consumers of those claims. Research by Nielsen Company (2017) shows that "Millennials and Generation X consumers are more likely to seek out and purchase products that are labelled organic, free of Genetically Modified Organisms (GMOs), and don't include added hormones" (Nielsen Report "It's clear: Transparency is winning in the U.S. Retail Market"). The report goes on to show that as consumer incomes rise, the importance of the 3 claims stated above rises as well. Which consumers will pay for the provenance story over bulk protein?



CLEAN LABEL SEGMENTS

Attributes of the five key label types



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Figure 2: Attributes which consumers are subjected to, and definition of these labels. Sourced from: Nielsen Report “It’s clear: Transparency is winning in the U.S Retail Market”

Internationally, there has also been a rise in the labelling of products to demonstrate adherence to *animal welfare standards* during animal rearing. Supermarkets such as Wholefoods in the US have partnered with non-profits including Global Animal Partnership (GAP) to create a program that measures the impact of an animal production system on the well-being and welfare of the animal itself. GAP has developed a 5 step programme as demonstrated below, which allows for immediate recognition via labelling for consumers to see.

4.1.5: The Current NZ Pastoral System – status quo?

The NZ pastoral farming system has continually evolved due to the development of social, environmental and market driven compliance standards over time. Since deregulation in the late 1980’s, NZ farmers have been tasked with the challenge of also maintaining and improving their viability & profitability. In addition they are operating under a gradual increase in environmental pressure as intensification of farming practices has predictably lead to questions regarding environmental impact.

Many farmers have monitored the impact on their own farms without understanding the ‘downstream effects’ of the runoff of phosphate (as phosphate attached to silt or soil which is transferred downstream) and nitrogen leaching through the soils to waterways. The real environmental



focus has been predominantly on the NZ dairy industry which to its credit has responded with significant capital investment and increasing compliance requirements for suppliers with fencing waterways and riparian margins. This work is well underway to improve the water quality as it leaves dairy farms. However, the red meat sector has to date been largely left to its own devices. Work has started to implement Land Environment Plans, although a substantial number of farms will still not have engaged in this process.

Pastoral farming is currently undergoing major change as the National Policy Statement for Freshwater Management (2014) (NPSFM) is implemented on a region by region, and catchment by catchment basis, with a view to regional authorities having standards set and limits in-place and operational by 2025. As the limits are imposed and farming businesses are required to understand the nutrient runoff occurring from their individual properties, there could be substantial reductions in stock carrying capacity or additional mitigation required to maintain current farming practice. The challenging question is who should bear the cost of these changes, the farmer or the consumer? Or should these costs be shared? Given many of our export markets currently subsidise food production costs and incentivise environmental initiatives, this needs to be carefully thought through.

4.1.6: Value for all Participants – or just for some?

One of the major challenges of the current supply chain is that the value chain's interaction with the supply chain limits any additional creation of value being passed back to the original supplier (the farmer).

The current model provides very limited opportunity for the farmer to understand and interact with their consumer. In fact, in many cases the only relationship the farmer has is with the processor of their stock. While there are a number of innovative consumer-led programs run by the major processors, these are generally limited to a small number of participants who are paid a small 'premium' to supply in-specification animals for processing.

The balance of the market supplies livestock for processing depending on the demands of their business (environmental or financial), with little or no understanding of the downstream implications of their decision. They are price takers. Correspondingly they are therefore not required to provide any information about the livestock they have supplied for processing or the manner in which the livestock were prepared (other than filling out and signing the Animal Status Declaration Form or ASD). This leaves a major market opportunity such as the ability for processors to target potentially valuable market programs such as "Grass Fed and Free Range" and a USDA (United States Department of Agriculture) endorsed program where 3 major claims of animal treatment are certified at farm level. These claims, heavily marketed by beef producers including Uruguay, are "Hormone and Antibiotic Free" together with "Never fed animal protein"; claims that most NZ farmers could make across a large proportion (if not all) of their animals. Unless farmers feel that they have ownership of the product through to the consumer, they will only do what they need to in order to be paid and have their animals processed. When farmers feel the pressure of meeting consumer expectations,



the quality of product and the manner in which the animal is raised will improve. They will also get direct pressure from other farmers to perform.

We are also unique in the ability to potentially market ourselves as free from GMO material. We are one of the few countries which have not embraced the use of GMO at this stage. The challenge is to develop a standard that creates value for the entire NZ red meat industry, from farmers and processors through to the consumer. It needs to be created and committed to by farmers behind the farm gate, then allowing processors to add value to the 'story' and collect a 'premium' from the consumer to be passed back to participating farmers in overall increased prices. Is this the opportunity to create our NZ food strategy and target consumers who value and are willing to pay for GMO free food?

4.1.7: Our Place in the Market now and in the future?

In my discussions with McDonald's in Chicago, it became apparent that NZ currently occupies a unique place in the global red meat supply chain. We are seen as producers of quality, safe product with high processing standards. Customers I spoke with suggest that in the eyes of the consumer we maintain an almost organic form of production. In all my discussions, NZ was seen as delivering to specification almost without fail, although presentation can sometimes let us down. It is difficult to trace NZ product back to the producer, and with consumers looking for the next 'big thing', the development of QR codes on our product (or use of technology such as "block chain") to provide an understanding of the supply chain) could assist with sharing our unique story.

We are also relatively unique in that we have good trade access and track record into most major export markets. Governments, both past and present, have focused on Free Trade Agreements (FTA) with our major trading partners, with NZ also benefitting from existing quota for beef into the USA and lamb into the EU (although it is noted that this may change with respect to Brexit negotiations). NZ processing companies have established long-term relationships in these markets, with a range of processor owned offices or arrangements with local importers noted. This presence allows an ability to drive individual brand strategies, but not necessarily growth of the overall category.

Previous presence of Beef & Lamb NZ, particularly in the influential UK and European Lamb market was noted a number of times, with concern that a lack of a presence will lead to less generic promotion (something for which it is difficult to measure success, but builds the overall awareness of the category). We need to learn from hard lessons in the primary sector. NZ managed to lose its highly recognised and valued wool mark and brand altogether. The strong wool market has never recovered.

Finally, NZ is largely seen as being the country that has its environmental impact minimised – we are seen as world leading. However, there are certainly 'chinks in the armour' that are starting to affect both consumers and



industry. Throughout my travels, I was consistently asked one question – “What is NZ’s problem with water?” Competitors and consumers are paying close attention to media stories coming from NZ, with a number of recent articles focusing on a degradation of our water quality. Whilst the work is being done by many farmers in planting riparian margins and fencing off streams and rivers is admirable (and must be acknowledged), additional work needs to be accelerated. With our image, our brand NZ and our reputation now at risk, time is not on our side.

4.2: Certification and Transparency - it’s just the how & when

There is an increasing focus on how food is prepared for consumption, particularly the nature of the production system that the food has been through. For example, the not for profit World Wildlife Fund (WWF) has targeted beef farming as one of their 5 key commodities that have a serious impact on the environment.

While the focus has been on the environmental degradation that can occur in areas like the Amazon, the Great Plains of North America and the Great Barrier Watershed in Australia, we cannot be complacent that the activities of livestock farmers in NZ will or indeed are going unnoticed. WWF believes that we currently consume “1.6 times what the earth’s natural resources can supply. By 2050, the world’s population will reach 9 billion and the demand for food will double” (WWF Website).

“Agriculture has a significant impact on its surrounding environment. Agricultural practices can generate a variety of substance that enter the atmosphere creating air quality issues and contributing to greenhouse gas emissions. Farming practices can also lead to the degradation of water quality through the release of nutrients, sediments, pathogens and pesticides into waterbodies” (Rabobank Sustainable Returns report). Awareness of these issues and determining mitigants or potential solutions is increasingly important and a focus as we move forward.

NZ agriculture is largely governed by acts of Parliament and Regional Council rules and regulations which vary depending on the region you farm in. The animal health and welfare rules are governed by the Animal Welfare Act written by Parliament, while Regional Councils (following the rules set out under the Resource Management Act and policy statements such as the NPSFW) control land use management and regulate inputs that farmers can use. And regulation continues to grow. Where farmers were once beholden only to market forces, the environmental regulations to prevent waterways being used as crossing points and drinking areas (and a much closer focus being applied with our increased understanding of nutrient movement and the downstream effects) are prompting much needed and welcome change.

From an animal perspective, treatments have continued to become more advanced and more targeted to specific issues. This has resulted in withholding periods which correspondingly affect timeframes for transfer of the animal and its subsequent production. As farmers it is incredibly important that we remember we are providing a product for human consumption and that we are producing nutritious and healthy food. There must be no excuses for allowing animals that are within withholding periods into the supply chain.



4.2.1: Clarification of farming practices to Consumers

As the world food production system has grown and evolved, the connection between farmers and consumers has weakened. For example, in NZ we have a growing number of children who will not have had the opportunity to visit a farming business and to understand where and how their food is produced. For years there have been myths perpetuated about the farming industry, such as growth hormones in chicken, when these were in fact last used over 30 years ago (Poultry Industry NZ). Certification offers an opportunity to be very clear about the products and techniques being used to produce high quality food products. Despite significant progress and change, the mass consumer still buys on price. Often the value added organically produced protein options are right alongside the high input and feed lot farmed proteins.

There is now a proliferation of claims made on packaging as mentioned earlier; no hormones, no antibiotics, no animal proteins in feed. Are these claims fair and meaningful? Are they actually true and supported by a reasonable process? There is a higher level of accountability that is being demanded from consumers, which is being passed back through the supply chain. Major food manufacturers such as McDonald's, Unilever, Nestle and retailers such as Whole Foods, Tesco's and Sainsbury's are demanding assurances about the manner in which food is being produced (its impact on the environment, the welfare of animals involved in the process and the social impact of the farming operation). These businesses are large purchasers of NZ product, in turn supplying their customers and consumers. When consumers question what these companies are doing about sustainability issues, they want to be able to offer real data and real examples to consumers.

As an example, the use of antibiotics in the New Zealand red meat industry is generally restricted to therapeutic use to treat specific conditions. Growth hormones are only used by a handful of farmers at most, and the feeding of animal protein to ruminants is forbidden. Collection and visibility of the data that is created when farmers purchase feed products or farm inputs and medicines along with good record keeping of where said products are used, would create an instant ability to demonstrate and prove to consumers how their food is produced. High input and high carbon footprint versus predominantly free range and grass fed animals.

4.2.2 Traceability – does the current system work?

When sending animals for slaughter at present, the only form or data that a farmer has to provide is an Animal Status Declaration (ASD) Form. This details a series of questions around withholding periods for drenches / treatments, place of birth for the animal, feeds that have been used, hormone treatment, vaccination against Johne's disease and TB testing. The form relies on the honesty and integrity of the farmer involved, with no evidence required as to the veracity of the information. If a farmer mistakenly sends animals to slaughter within a withholding period, there is no secondary check to ensure that the animals are 'fit for purpose'. Likewise, if a person new to farming were to treat stock with something other than an approved product, there is no evidence to ensure that this can be checked before the product enters the human food chain. This is not acceptable and is not best market practice.



Farmers in NZ do not have a strong record of proving compliance with traceability schemes, as is now very clearly evidenced by the recent *Mycoplasma Bovis* outbreak and subsequent commentary on the NAIT traceability scheme for cattle. While compliance of completion of the transfer of NAIT numbers to processors within the requisite 48hr period has been shown to be fair, farm to farm transfer of NAIT numbers is either not consistently happening within the mandatory period, or quite often not happening at all (Farmers Weekly Article, 29/01/18). As a compliance regime designed to assist in the event of a major disease outbreak, the failure of the system due to a lax attitude by farmers is not only disappointing, but for affected farmers and those at risk it can be devastating to their businesses.

Some countries such as Ireland operate a “passport” system with the transfer of animals. The animal cannot leave the property without its passport; surely we don’t need to revert to a paper based system such as this. NZ has smart technology. We are recognised internationally in this sector. The technology exists for a more appropriate and efficient solution, Electronic Identification (EID) across all animals with transporters involved in the scanning of animals to ensure accuracy of movement transactions. However, farmers need to ‘get on board’ and lead the change rather than being forced to adopt it. It is only through having systems such as NAIT that we gain access to some world markets. This process must be responsibly led by NZ farmers.

At this point, it is also worth noting that even if our traceability system was working properly, to date it only covers cattle. There is no accurate way in which to check the movement of sheep, goats and pigs, despite pigs being thought to be the most likely vector for a disease such as Foot & Mouth (FMD). In the event of a major disease reaching NZ, our ability to control the disease whilst simultaneously managing access to markets will be critical in ensuring we can afford the response. Are we paying merely lip service to our most prized asset as a primary producer economy – our bio security?

In the area I currently farm (Auckland Council region), I am currently not required to provide any facts or figures about the way in which I manage the on-farm environment. The annual Statistics NZ report is the only time that areas of crop, tree planting and pasture are reported. Although this means less paperwork as a farmer, it does not allow for any oversight to ensure that areas being cropped are appropriate or that best-practice management is applied. In Uruguay for example, all crop areas must be planned and submitted to regional authorities for the next 3 years. This gives oversight that areas are not continuously cropped (especially in only one crop), thereby degrading the soils. NZ is not lagging in this regard, we are simply are not ‘playing the game’ at all.

4.2.3 Maintenance of our current market position and future proofing it

NZ is seen as a producer of quality product, with strict controls and excellent biosecurity and food safety standards. Our unique geographic location and lack of major diseases which could affect animal production are seen as a real strength, with markets generally appreciating the unique provenance we offer



(due to the environment in which animals are raised). The majority of our product is grass-fed, which has seen a meteoric rise in popularity as consumers pay closer attention to the farming systems producing their cattle. Surely the great benefit of grass fed is that we know exactly what goes in, whereas on high input feedlots if one error is made the food supply chain is immediately compromised.

We currently benefit from the fact that we have managed to maintain our image of low environmental impact despite significant intensification of farming practice over the past 20 years (particularly the increase of intensive dairy farming operations at the expense of lower impact sheep and beef operations). However this intensification has come at an environmental cost which is now being noticed (particularly by the NZ public) as water quality has degraded in some catchments. This is having a detrimental effect on our image on the world stage and is challenging previous perceptions of NZ's environmental image. If we wish to protect and enhance the status of our product as some of the world's finest (with a unique environmental story as part of that), we must act now.

By creating and implementing a certification regime that ensures all farmers are committing to the same high standards, we can then work alongside consumers to 'boost' their confidence that by eating NZ product they are contributing to environmental sustainability. The top two markets conscious of environmental sustainability are North America and Northern Europe, both are markets that NZ relies upon for export earnings. We don't have to achieve immediate perfection, however by setting goals and targets and measuring farms against them, we have the ability to take the NZ public and consumers on a journey. This adds to the provenance of our product – potentially the most sustainable in the world.

4.3: Developing Standards – it's a progressive journey

"The global food and drink industry now faces enormous challenges including a changing climate, risks to our natural capital and a demand for raw materials that strains our world's natural resources" (Origin Green Sustainability Report, 2016). With the global population of 7.3 billion expected to grow to 8.5 billion by 2030 and 9.7 billion by 2050 (UN Department of Economic & Social Affairs, 2015), we will have to continue to grow and evolve agricultural production practices in order to feed the increased population. Farmers and producers have been shown to be efficient at increasing production. However that can come at an environmental cost if appropriate controls and incentives are not in place. As science continues to evolve, we have become more aware of the impact of fertiliser, herbicide and pesticide use and sub-optimal management of livestock.

To meet the current population projections, the world will need to produce 60 percent more food than today (Rabobank, 2014). This includes a further 900 million tonnes of cereals and 200 million tonnes of meat annually. The expectation is that the majority of the increase in production will come from less developed nations, with only incremental gains likely to occur in countries like NZ. We will be faced with the challenge of having to produce more food, from less land, with less water and energy, while also reducing our greenhouse gas emissions. These challenges will naturally



increase the cost of production for farmers in NZ. The challenge therefore becomes, who do we aspire to feed and how do we connect with those people? Does NZ position itself at the high end – quality not quantity and value not volume?

As a framework, I have researched efforts made by the Global Roundtable for Sustainable Beef to set up a number of country specific frameworks that feed up to the Global Roundtable. The idea being that every individual country will have different and specific needs. However, these can be brought together under a wider umbrella of headings. Their definition of sustainability is as follows:

“The Global Roundtable for Sustainable Beef (GRSB) recognizes that the global beef industry plays an important role in the lives of the people and communities who produce and consume beef; the well-being of the animals under our care; the management of natural resources; and in efficiently meeting the growing global population’s demand for animal protein.

Underpinning our principles and criteria is the triple-bottom-line approach that balances environment, social, and economic considerations and the requirement that a sustainable beef value chain respects national and international laws that govern the activities of beef value chain participants.

A commitment to continuous improvement means that performance gaps are identified and addressed, while recognizing that actions taken must maintain a balance between the three pillars of social responsibility, environmental sustainability and economic viability.”(Global Roundtable for Sustainable Beef Website)

There are five key principles for sustainable beef production and delivery:

1: Natural Resources

The global beef value chain manages natural resources responsibly and enhances ecosystem health.

2: People & Community

Global sustainable beef stakeholders protect and respect human rights, and recognize the critical roles that all participants within the beef value chain play in their community regarding culture, heritage, employment, land rights and health.

3: Animal Health & Wellbeing

Global sustainable beef producers and processors respect and manage animals to ensure their health and welfare.

4: Food

Global sustainable beef stakeholders ensure the safety and quality of beef products and utilize information-sharing systems that promote beef sustainability.

5: Efficiency & Innovation

Global Sustainable Beef Stakeholders encourage innovation, optimise production, reduce waste and add to economic viability.



Although the above definitions are specifically related to beef, this could easily expand to accommodate the wider NZ red-meat industry.

4.3.1: Environmental

NZ farmers have historically shown that they are aware of their stewardship of the land, with over 167,627ha of land protected by landowners under the QE II trust scheme since 1979 (QE II National Trust). The challenge however is to ensure that the balance of the land which is farmed is done so under the highest possible environmental management. The next stage is to ensure that we have a method of capturing and recording the relevant information to help provide confidence to markets as required.

There are many definitions of sustainability. The two that resonate most with me are:

- “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Brundtland Commission for the United Nations, 1987)

And a definition that more likely applies to the many family farms in New Zealand:

- “A true conservationist is a (person) who knows that the world is not given by (their parents), but borrowed from (their) children.” (John James Audubon – American ornithologist)

NZ farmers have a long history of caring for the environment with many actively working to improve the environment on their own farms. In many cases, this can lead to an overall gain in productivity as less productive areas are removed from the farming system, allowing a sustained focus on the more productive areas. This leads to better use of resources and more productive livestock as the stock are not eating lesser quality feed or creating the opportunity for stock losses due to misadventure. Environmental sustainability is a continuous journey of improvement. It is about understanding the manner in which we look after the soils, biodiversity, water quality and landscape as we become more aware of the impact of farming practices. Whilst we as farmers have improved, with more farmers completing farm environment plans, the challenge is recording the effects that we have on the environment and then looking to mitigate some of those effects.

The NZ government has long recognised that we have finite resources in NZ, with the Resource Management Act (RMA) 1991, designed to assist in creating a process to discuss the use of resources and understanding as to the impact of those resources on the environment. The controls designed by the RMA are implemented on a regional basis through the regional councils (who can identify and work with impacted stakeholders to find an appropriate solution). There have been a number of initiatives started in the past few years



to assist farmers with commencing fencing of waterways and native bush, and to help fund the improvement of the on-farm environment.

Using the GRSB platform as an example, the areas that we need to focus on are:

- Air quality
- Water Quality
- Use and management of soils
- Greenhouse gas emissions
- Native forests protected
- Health and welfare of natural ecosystems
- Native flora and fauna diversity
- Sustainability of feed sources

From a NZ perspective, some of these are already managed by our RMA process and the extensive not intensive nature of pastoral farming in NZ. Farmers have for a long time been seen as great conservationists, with most farmers having a good idea of the native flora and fauna on-farm and the health of the ecosystem that supports it (indirectly if not directly).

Water quality has been in the spotlight of recent, and combined with the erosion of soils is likely to remain the single biggest challenge to our pastoral farming system. However with increased levels of planning and an on-going focus on fencing off waterways, wetlands and creating riparian margins, we can control a lot of the runoff. Continued planting of steeper, poor quality land or land that is prone to erosion and slipping will also manage the loss of phosphorous to waterways. The challenge then becomes the flow of nitrogen through the soil and ensuring that appropriate stocking rates are used on different land classes. Much of this work is already being done by local government authorities.

By implementing a standardised protocol understanding how much of the work has been done to protect the areas that may be under threat on-farm, a simple Gold, Silver, Bronze standard could be developed to show environmental standards on-farm. Waterway protection, natural bush protection, soil understanding and erosion control and pest control could then be monitored and improved over-time, with bi-annual inspections of all properties to ensure management is being improved.

4.3.2: Animal Welfare – does the minimum suffice?

Animal welfare in NZ is governed under the Animal Welfare Act (1999), with further strengthening of the laws in 2015. Farmed animal welfare is overseen and enforced by Ministry for Primary Industries (MPI) and the Royal Society for Prevention of Cruelty to Animals (RSPCA). The act “sets out how people should take care of and act towards animals” (Animal Welfare, MPI Website). However, this is somewhat of a minimum standard. How therefore do we ensure that this is regarded as best practice and allows animals to exhibit their natural behaviours while also recognising that they are being managed as part of a production cycle?



The animal welfare act legislates that animal owner's (farmers) must 'meet an animal's physical, health and behavioural needs' per below:

- Proper and sufficient food and water
- Adequate shelter
- The opportunity to display normal patterns of behaviour
- Appropriate physical handling
- Protection from, and rapid diagnosis of, injury and disease

Almost all farmers in NZ are aware of the requirement to meet the above demands on the animals. The challenge is ensuring that our management and understanding of the requirements, meets these needs from a consumers perspective.

Since 2008, Global Animal Partnership® has developed a 5 step welfare rating program for farm animals which is audited every 15 months to ensure compliance. This can then be used as part of a marketing program to show consumers how the animals have been treated throughout their lives, in a smart, colour coded system. The basis of the program is shown in the picture below:

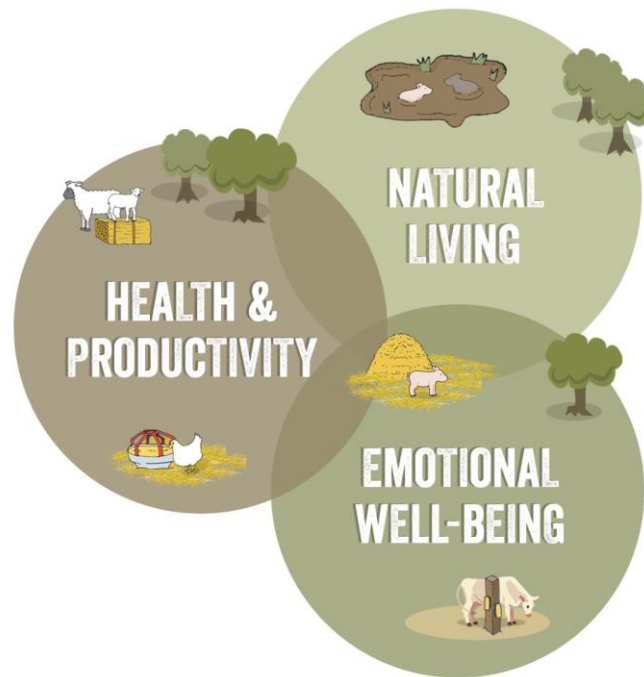


Figure 3: Interaction of Environment and Animal Welfare
Sourced from Global Animal Partnership (GAP) (2018)

NZ farmers are adept at realising that animal productivity is driven by the management of the animals, combined with high quality genetics. Our system in NZ for pastoral animals is relatively unique. In general, we don't use the high intensity confined feeding systems that are somewhat typical in other markets. This means that pastoral animals in NZ are allowed to exhibit more natural behaviours and eat feeds more typical to their natural environment (i.e. Grass and pasture based forages).



Our system is based around the use of the natural environment we farm in NZ. Although this allows animals to exhibit natural behaviours and benefit from natural minerals and vitamins, this can also lead to challenges from climatic conditions. It is important that we understand the impact of adverse conditions on livestock and how we best manage that. Use of natural shelter in wet and windy conditions and ensuring shade is available in hot and dry conditions. We must always be aware of the impact of the visual images of stock suffering in these conditions on the consumer.

4.3.3: 5-STEP ANIMAL WELFARE RATING LABELS

From their work defining animal welfare standards, GAP has developed a 5 step rating system. A third party audit is used to confirm the on-farm animal welfare standard against GAP's welfare principals. The rating is then displayed on certified meat and other products, indicating to the consumer that they can be confident in the manner in which their product has been raised. The GAP 5-step rating labels are shown below:



Figure 4: Animal Welfare Rating Labels developed by Global Animal Partnership
Sourced from GAP website (2018)

Based on the GAP standards, the majority of NZ pastoral farms would have no challenge in meeting Step 4 – Pasture Centred. However the standards to reach Step 5 and Step 5+ would rule out the majority of NZ pastoral farms. This is due to the constraint of not being able to physically alter an animal (no castration, tail docking, ear-marking or de-horning being the major challenges) and our propensity to operate with the use of breeding farms and finishing farms rather than animals being kept on the same property for whole of life. It is interesting to note that even Origin Green does not allow animals under the standard to have been farmed on more than 3 farms during their life.

The purpose of the label is to give a very quick, colour coded reference to consumers, which allows them to make the choice as to the manner in which their food has been raised. I find that this is not substantially different to the use of “Organic” or “Free-range” being used as current descriptors on animal products. The goal however is to provide some auditable standard which gives the consumer confidence and provides assurance to industry that farmers producing under the standard are living up to expectation and are unlikely to bring the industry into disrepute.

A common criticism of the NZ farming sector which I have encountered is the fact that due to our outdoor systems, stock can be left in challenging climatic conditions at stressful times such as during lambing and calving. The world market is becoming less likely to accept images of dead stock due to perceived



mismanagement of the welfare of the animal. Cases crop up from time to time of animals that have been neglected due to 'being out the back of the farm'. This may involve ingrown horns or lameness etc. We can't accept this as a reason for not dealing with the issue in the 21st century. We must take a more professional and proactive approach to addressing animal health concerns.

A further question asked of me on my travels was regarding NZ's approach to managing bobby calves. The perception (rightly or wrongly) is that we don't deal with the calves in an appropriate manner with a large proportion of the people spoken to perceiving that the slaughter of 4 day old calves (regardless of the whether it is done humanely) is not satisfactory.

4.3.4: Enforcing the standards

Once the standards are set (providing that adequate consultation has been undertaken and the standards are well conferred on the farmers), independent audits can be carried out to ensure compliance and to understand where we are as an industry. An audit of each farming business every 18 months to 2 years would be sufficient to ensure compliance with standards whilst also giving reasonable time for each business to amend/address issues identified during the audit process. NZ internationally has an excellent reputation for smart technology fostered by its isolation and 'number 8 wire' thinking of a generally under-capitalised country. Here is the greatest opportunity to have a digitally smart and simple audit system that like any software is continually upgraded and improved. Farmers should always own their data but the ability to sync financial, agricultural inputs, scientific data and readings, animal welfare etc. into a single platform is what we should be aspiring to. Audits could target some of the following:

- Nutrient budgeting and actual usage
- Fencing of (or exclusion of stock from) waterways and wetlands
- Fencing of (or exclusion of stock from) bush and significant natural ecological areas
- Erosion control
- Chemical usage
- Crop rotation and planning
- Animal welfare issues on-farm
- Use of drench and antibiotics
- Greenhouse gas emissions

This is not an exhaustive list, but instead an indication of some of the areas that could initially be focussed upon. Audits would need to be more exhaustive and involved than some present audit processes which don't typically involve leaving the farm house. They should challenge what is being presented to them to ensure that there is a confirmation of the process being undertaken to record results. Fertiliser and animal health records can be matched against farm purchases to ensure accuracy of treatments and therefore adherence to withholding periods. While this may require more paperwork from farmers, it will also serve to set us apart from more commoditised product where there is no evidence of inputs into the supply chain.



In the age of digital technology, it should be relatively easy for farmers to match animal treatments and drugs used on-farm with the animals that they have been used on. Particularly with the NAIT system for cattle, all treatments could be loaded against an animal's tag which can then provide whole of life traceability. This opens the door for claims to be made against an animal's products (antibiotic free etc.). The onus should be on the farm suppliers and industry to meet the costs of plugging into the digitally smart on farm systems unique to each property / farm unit.

Once farms are audited and standards have been issued, farmers could be ranked on their compliance to ensure the NZ public and consumers are aware of the standards being achieved on-farm and where weaknesses lie. A simple system such as Bronze, Silver & Gold would provide an easy way of identifying where farms are meeting targets or the use of a traffic light system to highlight areas of non-compliance.



5: Conclusions:

5.1: Creating a Connection – “know thy customer”

5.1.1: Connecting with the market

The NZ red meat industry needs to rebuild its engagement with its consumers both in NZ and abroad. As such a small industry, we have a unique opportunity to offer customers more depth, more detail and a real knowledge of the production practices that occur in our industry. This will lead to a higher engagement and an ability to extract a higher price from the consumer. Nielsen's Global Sustainability report in 2015 stated “Sixty-six percent of global respondents say they are willing to pay more for sustainable goods, up from 55% in 2014”.

Good environmental practice and high levels of animal welfare are unlikely to lead to increased sales or any provision of a ‘premium’ from consumers in our key markets. What it does establish however is an integral part of the ‘red meat story’, something that at the time of writing Beef & Lamb NZ together with processors under the Red Meat Profit Partnership (RMPP) has been developing. Correspondingly, having a great story which relies on the environmental and natural aspects of NZ production, combined with the people involved being celebrated for the connection with land and animals will not stand up if poor stories are then posted in NZ media. A combined approach including both measurable and auditable standards with a great story however, give the NZ red meat industry an opportunity to position itself as world leading – with the focus then on the quality of product that we can supply.

Discussions held with ‘high end consumers’ (people that I had reason to believe had a high disposable income) lead me to the understanding that they were seeking a combination of a good product (paramount) with a good story (also important). These people currently look to products that are marketed along the lines of ‘Organic’. In further exploring the reasoning behind the demand for organic products, the main concern of these consumers is the desire for their product to have no insecticides as part of the growing process. A transparent supply chain with acknowledgement of the low levels of chemicals used in the system could open an opportunity to work with consumers in the sub-organic space.

The other consideration that must be taken into account is that a large proportion of NZ product doesn't end up directly in the hands of consumers, but is used by manufacturing businesses or wholesale food supply chains as part of a wider product offering. For NZ beef, a large consumer of raw material is a company such as McDonald's. As sustainability becomes more of a consumer movement, businesses like McDonald's want to ensure that the product they use comes from an auditable supply chain. Simply having a good story is not enough. They need measurable standards that evidence the way in which the product has been grown. It is worth noting that McDonald's were behind the establishment of the Global Roundtable for Sustainable Beef, part of their commitment to the supply chain of one of their major ingredients.



A few notes on claims that consumers like:

5.1.1.1: Organics

Organics continue to be a very fast growing market segment (Growth of 8.4% in the US market in 2016; Organic Trade Association – OTA.com) despite the challenge that organics cannot and will not be able to feed the world population as it continues to increase. Organic produce is generally priced at the “top” end of the food market, with a significant price premium to ‘standard’ produce. This differentiates the produce as different, with consumers having a choice on what appeals. Due to consumers generally believing that they understand the meaning of organic produce, this market has continued to grow rapidly despite variations in production practices. There appears to be a huge variance around the world on what classifies as ‘Organic’, with variations I noted including the use of antibiotics to treat sick animals with those then able to be retained in the farm system.

An opportunity may be to market our product as “close to organic” or similar, to take advantage of the natural production system that we operate.

5.1.1.2: GMO

NZ is currently unique in the world for the lack of GMO in the country. This is a huge marketing opportunity, which is currently not used due to the potential of some GMO product being fed predominantly to dairy cows through the import of GMO soya bean products. High income consumers note that products that are GMO free are of high importance (Nielsen Transparency Report).

5.1.1.3 : Antibiotic / Hormone Free

The majority of NZ red meat production will meet this category, with a few select animals either treated with Hormone Growth Promotant (HGP) or therapeutic antibiotics to deal with issues such as cuts or wounds caused in the paddock or conditions such as woody tongue needing a course of treatment. The lamb industry would be even closer to not having any antibiotics or hormones used – ever.

5.1.1.4 : Environmental Sustainability

There is an increased level of awareness from consumers and particularly from young consumers (millennials) about the impact that the products they are consuming are having on the environment. The majority of our product has to travel a significant distance to market – impacting the carbon footprint of the product. This means we have to be very aware of the impact that we have on-farm, to reduce our overall impact. Millennials want to know that the products that they purchase can be replicated time and again – that the environment is not degraded from production methods. This may mean that we have to start producing data on our carbon footprint and our journey toward carbon neutrality. Showing how we are lessening the environmental



impact of our operations will be a major part of the story going forward.

5.1.1.5: Free range – the grass-fed story

An issue raised during many of my discussions was the lack of a true free range, grass-fed story from NZ. This is what we have always done well at. Due to the rising cost of production, many NZ farmers have tended toward trying to mitigate climatic concerns through the use of various different cropping regimes. These include the use of brassicas over winter and summer, crops such as maize and cereals both for standing feed and silage and use of herbs for growing and finishing stock. While these have helped from a volume perspective, they do not add to the story and therefore the value of the product. Is there a line to walk that balances the free range 'natural' rearing of animals outdoor with predominantly grass fed or pasture centred?

There is a growing market for grass-fed product, which we as a country are in a unique position to provide due to our temperate climate. The challenge is, that with other producers now recognising the value in this market, claims are being made and meat is being produced that does not meet the claim of grass-fed. Examples include excessive amounts of supplementary feed being used leading to little or no differentiation of product. Currently the consumer believes that they are getting grass-fed product. However if an investigation were to occur back through the supply chain, with negative results, there is likely to be a significant backlash and therefore loss of a potential market. With our unique ability to supply this product, has the time come to start moving back to a whole grass / herb based system? A reduced level of cultivation of paddocks for sowing in more intensive crops would also be of significant environmental benefit reducing the sediment run off and loss of top soil.

One claim will not fit all markets. It is very much about selecting a strategy that fits a particular market, although that is best completed by the meat processors.

5.1.2: Farmers – baseline minimum acceptable animal welfare and environmental standards

Farmers sit at the start of both the red meat supply chain and the value chain, with any future increase in value dependent on the work those farmers do behind the farm gate; environmentally, animal health & welfare wise, and through improved genetics or more consistent finishing of animals. Generally, farmers need to see value in that work before they are likely to take the plunge with capital investment. However we stand at a unique junction, where due to increasing levels of regulation on the environmental impacts of farming, farmers are already completing a large proportion of the work that is required. The challenge now is standardising that work across the country and then collecting and auditing the information to provide evidence of what is being achieved.



Farmers are likely to request a 'premium' paid to those who meet the standards imposed upon them. I would suggest that this work is of such a critical nature, that non-compliance with the standards after a period of time could result in a 'deduction' from the price that would otherwise be received by the farmer or even denial of market access. Based on my travels and the operations that I observed (particularly in South America), the discussion is fast changing from "can you supply" to the quality of supply and standards that can be achieved. The industry will not change overnight, however if we want to change the discussion or connection that we have with the market then we need to be aware of what other major producers are doing. In the beef space, a number of countries are already certifying the sustainability of their operations, with beef produced in the Amazon biome (region) of Brazil able to be certified sustainable. This is something we cannot achieve at present. Instead we continue to rely on our 'good name'.

The challenge is that any changes to our existing red meat industry structure (around industry payments or incentives), would need to be agreed by the entire red meat industry prior to implementation. Without industry wide agreement the first processor to undertake such a move would likely be subjected to a loss of farmer clients.

5.1.3: Education – understanding what our story is and telling it well

As NZ has evolved from a predominantly rural population to the current more metropolitan and urban based population, we have lost much of our connection with the rural economy which continues to be one of our largest exports. As the industry has evolved, we have continued to see the decline of small landholdings, with consolidation of farms to generate "economies of scale". As technology has improved and farming techniques altered, there has been a significant decline in the number of staff involved in farming operations, leading to a corresponding decline in young people growing up on and around farms in rural communities. This has exacerbated the growing disconnect between rural and urban consumers.

The issue is that for a country that relies very heavily on the export of soft commodities, we no longer have the connection with our urban communities, the very people that we rely on to help tell our stories. Instead, there has become a degree of animosity between urban and rural dwellers, particularly over the environment as expansion and intensification of farming operations is blamed for poor water quality. This negates some of the great work that is being done on-farm to improve both water quality and environmental outcomes, especially in the eyes of the local and world media. A connection between rural and urban New Zealanders is very important. We need to bring them along on the journey.

As a farmer, I would like to see more open days to explain to consumers what is occurring behind the farm gate, and to provide an understanding of why prices for red meat are generally considerably higher than those for more intensively fed white meats. There needs to be a discussion around the work



that is going on on-farm to improve waterways and standards, to educate young consumers of where their product comes from and the manner in which it is produced. They can be our biggest advocates or our worst detractors.

5.1.4 Local vs Imported Food

92% of NZ lamb and 82% of NZ beef production (Meat Industry Association, 2018) is exported offshore. This means that we will always compete against locally produced food in the markets that we are exporting to (which at least in Europe enjoy considerable subsidies for production and incentives for environmental change and improvement). We cannot afford to give their locally produced product an opportunity to discredit our NZ produce in their own marketplace. Although we may not always be able to compete against domestic claims, the more information that we are able to provide, the greater the consumer's awareness of our production processes (and the benefits of those processes) will be.

The use of QR codes and the internet can provide instantaneous information about the product, while the consumer is in the act of purchasing. This allows us to add value to otherwise standardised product, for which the differentiation may only be the country of origin. For products that have been through a manufacturing process or are part of a larger product, the country of origin / values of the product may be less important from a labelling perspective. I suggest however that they will be at least as important to the company that owns the final product to ensure the verification of any product claims.

5.2: The Risks - understanding the customer connection.

NZ farmers have been exceptional at continuing to innovate and improve their farming businesses as new technology and techniques have evolved. The farming businesses that we run today bear limited resemblance to the farms that were run 30 years ago. Farm sizes continue to increase, with less labour units required than was typically the case and more mechanisation. Areas of farms that were once considered appropriate for grazing are now being retired to trees or for wetlands. Reticulated water systems are taking the place of dams and streams as a source of stock water and local government regulation is changing the way in which we look at the underlying asset that forms the farming business. The way in which we impact the environment is being more closely monitored and challenged than ever before.

As these changes occur, we will also find that we start to achieve the maximum levels of production that can be expected from farming operations. In some cases, farms may already be achieving levels of production that may not be able to be sustained into the future. The challenge therefore becomes maintaining the margin that we create from the farming operation. Input prices have continued to rise over time, with variable increases in prices for meat and fibre depending on market conditions. Successful farmers have been able to mitigate these conditions by increasing productivity (in a lot of cases producing more from less i.e. increased lambing percentages). In the event we are unable to sustain these productivity gains, we will require higher returns from our products to maintain our return on capital invested. In my view, this requires better connection with the consumer.



Connection with the consumer is two-fold. We must have a product that makes people take notice. It must be different in some way. Quality control is paramount to ensure that consumers enjoy the same eating experience every time. Secondly, it needs to have a great story attached. The story **must** be verifiable, because it **will** be checked.

5.2.1: The Risk of NOT Evolving

We are in many cases so sheltered from our global consumers that we simply do not realise and appreciate the pace we need to be changing just to keep abreast of our global competitors. We are slow at recognising this trend and providing consumers with more information and the risk is that consumers will vote with their feet and gravitate toward alternative products. This could be similar products which are produced in other countries or perhaps even a move toward synthetic and artificial meat products that consumers perceive as more environmentally friendly or sustainable. Already there are other major meat producers that export their products under the banner of “hormone free” or “antibiotic free”, both claims that some producing countries make at a wholesale level. Ireland has reached further with their strategy to promote their achievements, with claims such as a “producer with verified sustainability commitments” per the image below. If we are to capture the full value of our products, we need show a unique claim that helps to set us apart in an otherwise crowded marketplace.



Figure 5: Example of Origin Green Labelling

We will also continue to face questioning from the consumer regarding our ongoing commitment to the environment, something that we have proudly stated for many years. However, if we have no method for measuring and recording the current status of our environment, we have no way of proving our commitment to improving it and minimising our impact upon it in the longer term.



5.3: Summary

New Zealand farmers have traditionally been efficient at increasing the productivity of their farming operations and delivering greater product for processing while managing their on-farm costs. Looking towards the future, there are obvious challenges regarding their ability to continue increasing production whilst correspondingly managing environmental concerns and ensuring high animal welfare standards. With increasing costs and limited opportunity to increase production, the challenge therefore becomes increasing the price we receive for our outputs in order to maintain profitability. The increasing connectedness that is afforded to us through the internet and speed of communication, allows us the opportunity to connect with our consumers on the other side of the world in a way we have never achieved before.

In order to generate that connection, I believe we need to achieve four things:

- A great story that links the red meat sector together (currently being developed by Beef & Lamb NZ).
- Clear environmental and animal welfare standards against which all farmers are measured and monitored.
- An easily identifiable packaging standard which can be used by all meat processors to signify to the consumer that the produce meets exacting standards.
- A change in mind-set of farmers to ensure that when product is sold for processing, it is the BEST and most CONSISTENT we can grow.

There is a focus on sustainable production around the world, with consumers becoming aware of the fact that animal production in particular has become more industrial than they were once led to believe. This presents a fantastic opportunity for NZ to differentiate itself on the world markets, something that I believe will lead to increased value over time. This change cannot be led purely from a marketing perspective. It must be led on-farm, with farmer engagement a key factor. Consumers (quite rightly) are starting to investigate the story behind their food with the internet providing a means of connecting with producers all over the world. We need to take advantage of this.

As we work to develop this connection, it is important that we also strive to achieve consistency of product. We are food producers and we need to ensure that we deliver a quality product every time. Once we invest in the story, in order to live up to expectation, we must be able to provide evidence that supports it. This will drive a deeper consumer connection leading to increased returns as our product becomes more sought after.

5.4 Recommendations:

- Review the current meat payment schedule to ensure it is fit for purpose and leads to quality product being delivered for processing. Farmers need to be encouraged to think about the quality of product they produce, not necessarily volume.
- Develop an overarching, national environmental standard that determines the way in which we want to farm our pastoral livestock. This would be overarching regional council plans and include standards for stock management on all classes of land.



- Create an animal welfare standard that we can strive towards and be measured against (not simply a minimum standard). This will give farmers an opportunity to proudly identify how they rate against the standard, while providing a measure of confidence to both NZ and global customers.
- Ensure the minimum accepted standards are complied with. For the greater good of the industry and NZ red meat, we must reward those who step up and comply with market access to process their produce. As with the dairy sector, non-compliance with accepted minimum standards means no milk collection. The meat processor must become our 'customer' not 'just' the abattoir.
- Decide on an overarching NZ food strategy that producers and manufacturers can support. Following this, we need to create a plan to measure, record and improve upon our initial results, and demonstrate to our consumers that we are world class at what we do.
- Continue recent efforts of signing up to global accords such as the "Global Roundtable for Sustainable Beef" to bring together NPO's, Processors, Consumer facing businesses and Farmers.



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