

NZ Wagyu Inc. – Where to from here?



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Kellogg Rural Leadership Programme

Course 34, 2016

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Executive Summary

Throughout its short history, the New Zealand Wagyu Industry (NZWI) which was established in the early 1990's with the introduction of cattle from Australia and the United States (US) via original parents in Japan has been struggling to grow.

This is partly due but is not limited to the long time frames required to breed up stock, lack of knowledge of animals, perceived lack of appropriate farming systems (feed lot) through to an unwillingness for capital investment in the industry due to some early adopters being burned by a small few fly-by-nighters who vanished owing large sums of money.

Although it has come a long way in a small country at the bottom of the South Pacific the industry still has some way to go; the need for scale, the ever-changing consumer landscape and so on, importantly what is no longer solely important is food safety and price.

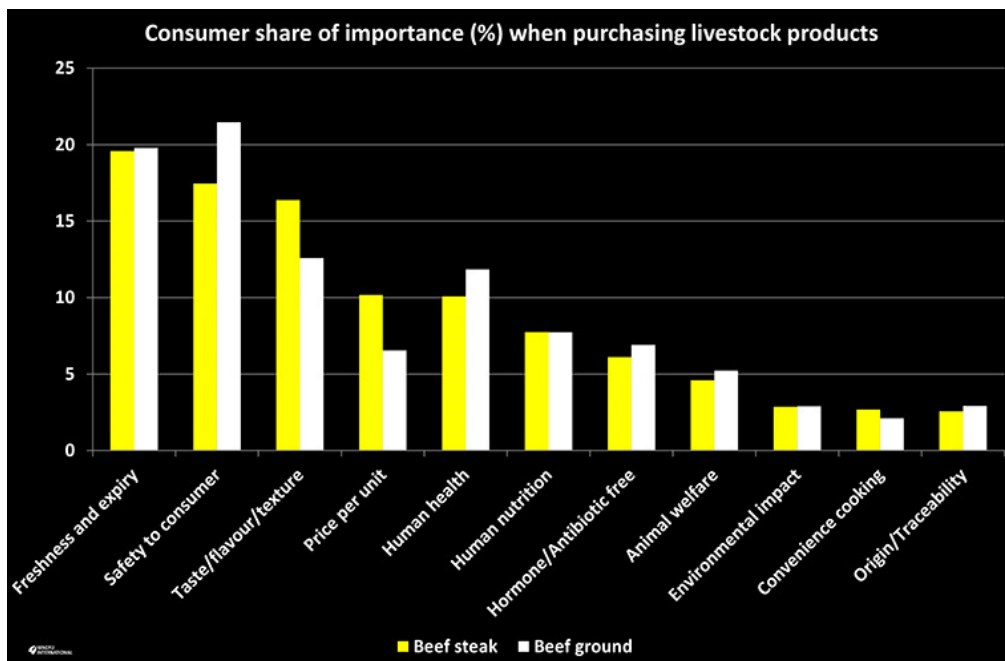


Figure 1: Factors affecting meat quality and the role of fatty acids (From Wagyu International, 2016)

We have seen food miles and carbon foot prints come and to a certain extent go or are rebranded, the global consumer drive for clean, green “sustainable” production is still being echoed loud and clear in all industries in particular that of agriculture which according to the United States is the second largest emitter of greenhouse gases globally (IPCC, 2014).

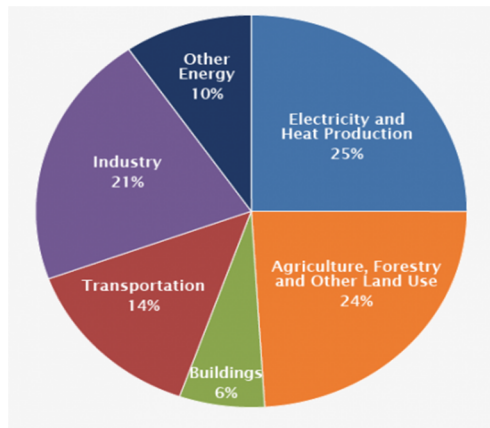


Figure 2: Global Greenhouse Gas Emissions by sector in 2010 (From IPCC 2014)

The aim of this study was to ascertain what the shape of the industry is currently, where it is headed in terms of opportunities and threats and what it may take to be successful in the future. To answer these questions I split the research into two parts;

1. **Industry contact** - Made contact with a number of industry participants, arranging interviews and sent out a survey to those involved in the wider industry
2. **Research based** – Review of relevant literature, performed an industry analysis with Porters Five Forces and a SWOT analysis

As a result of the research there are four recommendations in order to answer the question where to from here for the NZWI:

1. Collaboration - The industry needs to pull together and form a strong breed association which can be used as a base for planning future change from.
2. Disruption – Create a story and brand behind the product and look to develop new products and markets to challenge the status quo of the wider industry, in particular this should be focused on the strengths of the NZ industry (low cost, grass based, sustainable farming).
3. Genetics – The industry should partner with the Australian Wagyu Breeders Association (AWA), as they are similarly doing with the American Wagyu Breeders Association (AWBA) and utilise more of the already strong gene pool and prior research.
4. Market place – The establishment of an online trading platform in order for producers to buy and sell cattle and bring some cohesion to the industry.

Acknowledgements

There are a number of people who I would like to thank for their time and help with completing this research topic starting at home with my wife Charys who didn't mind when I was stuck at the computer on countless weekends and weeknights trying to locate the Wagyu Holy Grail.

To the Kellogg Rural Leadership Programme course conveners and fellow participants, thank you for keeping things on track and broadening horizons, the coaching sessions were invaluable.

Thanks must also go to my "day job" employer ASB bank for the generous financial support with course and related costs and also time away from the desk that didn't impact my annual leave quota.

Lastly and perhaps most importantly, to the people directly involved in the NZWI that have given your time on weekends, in the evenings on phone calls, video calls, through emails and catching up in person, you have been a huge help along the way in terms of this project. You have shared your homes/dining tables/couches and have been forthcoming with information with the view to cementing the NZWI's future as successful and sustainable long term.

For the above in the words of Freddie Mercury "I thank you all!"

1.0 Introduction

Outside of Japan the global Wagyu breed is very young with the NZWI no exception, the breed first arrived in New Zealand (NZ) in 1992 with imported genetics from the United States (US) and Australia originally coming straight out of Japan only a short while before.

Like its counterparts in other parts of the world the NZWI operates in fast-moving times; the recent advent of plant-based/cultured meat creates concerns around the future of food, consumer preferences are changing faster than ever, concerns surrounding animal welfare and the environment through to food security and safety.

The future of the industry will need to stay one step ahead of the game, this research topic involves those who are involved in the industry themselves as well as with some strategic analysis.

It contains research on the key themes and existing knowledge as well as touches on the opportunities on the horizon and what the threats are that need to be considered along the way.

2.0 Aims and Objectives

This aim of this topic is to look into the crystal ball of the NZWI and come up with some answers as to where the industry should be heading in order to be profitable and sustainable long term.

Like any food production industry there are many facets and themes that need to be explored and no single answer could be expected, the question being “NZ Wagyu Inc. – Where to from here?” is very broad in the sense that there are a number of moving parts to look at and as such there are a number of points of interest not limited to the following:

- What are the key opportunities?
- What are the key threats?
- What are the key themes and issues surrounding the industry?

3.0 Background

Present day, the NZWI consists of two associations; The New Zealand Wagyu Breeders Association Incorporated (NZWBA) and The New Zealand Wagyu Association Incorporated (NZWA).

The NZWA consists of members associated with Firstlight Foods (FLF) and Wagyu Breeders Limited (WBL; Brownrigg Agriculture), their website states *“The New Zealand Wagyu Association Incorporated was formed by a group of New Zealand farmers involved in or interested in the breeding, finishing and/or marketing of Wagyu cattle and beef”* (Wagyu NZ, 2016). The NZWA are focussed mainly on first cross (F1) or better Wagyu beef that is the result of crossing Full blood (FB) genetics with Angus and dairy cows which are then marketed through FLF around the world.

The NZWBA consists of all other breeders in the country who are not aligned with FLF, from this you can see there is more than a bit of confusion around the identity of the NZWI looking from the outside in.

3.1 Breed History

Wagyu as a breed can be split into three categories; Full blood (FB), Pure bred (PB) and Cross-bred (F1+). Unlike most other breeds of animal and due to their history, the Wagyu breed is one of the only ones in the world to recognise what are known as FB animals; these being animals that are 100% Wagyu with many generations of pedigree traced back to Japan and no sign of cross-breeding, these are the most highly sought after in Japan and around the world where they achieve a price premium. The next level below this and what is familiar with other animal breeds is PB, these are animals which are >93% Wagyu content, to be called a PB the animal must have been crossed back to at least four generations of FB. Lastly below this are cross-bred, animals from a F1 through to F4 again by crossing back to FB.

The breed is unique to Japan, literally translating to “Japanese cattle” (Wa – Japanese or Japanese style, gyu – cattle), from a genetic point of view these cattle have been isolated for almost 300 years.

Blackmore Wagyu, a renowned Australian business states *“Isolation started with an official mandate of the Shogun from 1635 until the Meiji Restoration in 1868, when the government encouraged a more Western diet and allowed animals to be eaten (prior to this Buddhism and Shintoism did not allow it), for a short period of 20-30 years a small number of live animals were traded with China and the Netherlands (specifically native Japanese cattle were crossed with Brown Swiss, Devon, Shorthorn, Simmental, Ayrshire, and Korean cattle), following this the herd has remained closed to this day.*

This genetic isolation of individual Japanese strains was also helped by geographic isolation due to the rugged terrain ensuring distinct within-breed characteristics, today it is regarded that there are 4 breeds of Wagyu;

Japanese Black, Japanese Brown, Japanese Polled, and Japanese Shorthorn. Of these the Japanese Black makes up 90% of the population, the three main strains are Tajima, Shimane and Tottori/Kedaka. (adapted from Blackmore Wagyu, 2016).

From these origins the breed remained the sole property of Japan until the 1976 when 4 FB bulls were exported to the USA without the consent of the Japanese, by 1989 the Japanese government began to reduce their tariffs on imported beef and encouraged ranchers in the USA to produce product for Japan. In the early 1990's there were several live exports of a small number of FB animals, the last shipment out of Japan was in 1997 when the government put the export ban back in place and declared Wagyu cattle a national living treasure, at this time the total number of FB animals that had been exported stood at less than 200. (Reserve Cattle Company, 2016).

Today the number of FB Wagyu cattle number almost 2 million globally with Japan having 96% followed by Australia and then the US, the US has the highest number of PB cattle however these make up less than 3% of the total Wagyu population, F1-F4 number around 1 million of which Japan has 50% followed by the Americas (USA, Canada, Central & South America) with 30%.

The total number of Wagyu including F1+ animals number approximately three million globally.

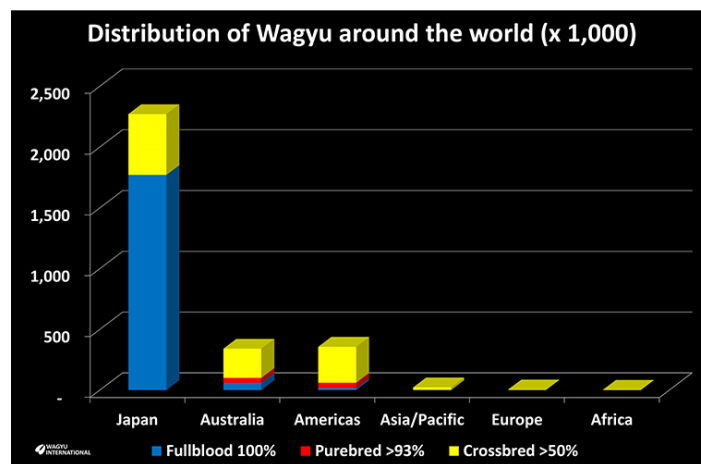


Figure 3: Wagyu numbers globally (from Wagyu International, 2016)

The New Zealand history of the breed dates back to 1992 when the first animals arrived, in these early days of establishment the industry struggled trying to achieve scale initially hampered by the sheer timeframes required for breeding from a small population base, as well as this there was an element of skulduggery with some individuals looking to make a quick dollar at the expense of others, lastly and perhaps most importantly there was a lack of an integrated supply chain through to the consumer to encourage grower premiums.

In these early 1990's the original NZWBA was formed however due to the above it broke up in the mid-late 1990's with a small number of breeders staying together and starting a feed-lot with stock marketed and sold in Japan.

In the early 2000's FLF started marketing grass-fed cattle forming a partnership with and alongside Wagyu Breeders Limited (owned by Brownrigg Agriculture). In 2012 FLF was awarded a Primary Growth Partnership (PGP) with Ministry for Primary Industry (MPI) funding of \$11m to match industry funding through FLF of \$12m, the aim being to develop an integrated value chain for high value marbled grass-fed beef and increase the GDP of the NZ economy. An outcome logic for the PGP is attached in Appendix 2.



Figure 4: Screenshot from TV 1 Rural Delivery story on Firstlight Foods, 2016

As of July 2016, the NZWBA (breeders not associated with FLF) regrouped and are now looking to take the industry forward separately from the NZWA, for the most part this group is focussed on a collaborative approach by members embracing the Wagyu breed in its purest forms (full blood and purebred) and trying to increase the scale of these two forms into a reliable and marketable product.

3.2 Wagyu Beef

As far as beef goes the Wagyu breed is known as the most sought after in the world due to its tenderness, intense flavour and richness which comes from a high percentage of internal or intramuscular fat (IMF) deposits known as marbling.

The composition of this marbling is different to other beef breeds with its high ratio of mono-unsaturated fatty acids (MUFA) to saturated fats (SF), MUFA oleic acid (the most desirable fatty acid which has shown to lower cholesterol) and MUFA palmitoleic acid are primarily associated with favourable flavour in the Western palate and diet (Drayden & Maechello, 1970).

There are different grading systems around the world with the most popular in terms of Wagyu being the Japanese followed by Australian then the US system:

Japan – Japanese Meat Grading Association (JMGA)

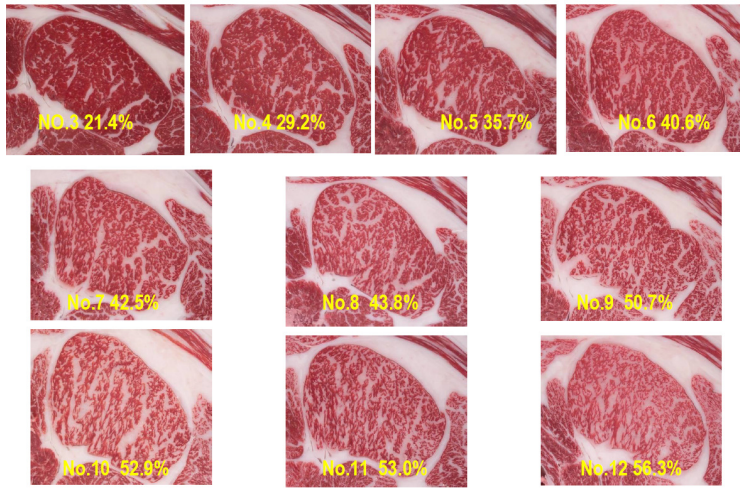
Under Japanese law, to be authentic Kobe/Wagyu beef it must meet certain strict criteria including; pure Tajima lineage, between 28-60 months of age, born, raised and slaughtered in the Hyogo Prefecture of Japan, certified yield score of A or B, JMGA Beef Carcass Grading Standard (BCGS) quality score of 4 or 5 (a combination of marbling, colour, firmness & texture), and a Beef Marbling Score (BMS) of 6 or higher.

Australia – AUS-MEAT & MSA Marbling

The Australian Wagyu industry is the second biggest in the world and as such has its own grading system with a scale of 1-9, this is taken by a visual assessment by an AUS-MEAT qualified grader and is therefore somewhat subjective.

United States – USDA Marble Scoring

The American system is based on marbling and has three base levels which from lowest to highest are Select>Choice>Prime, roughly 3% of traditional US cattle grade as Prime (equivalent to JMGA BMS 5 above), comparatively over 90% of Wagyu grade as Prime or above.



Each marbling chip shows the **minimum IMF%** required to achieve each BMS number

Figure 5: Japanese meat grading; Japanese BMS (American Wagyu Association, 2016)

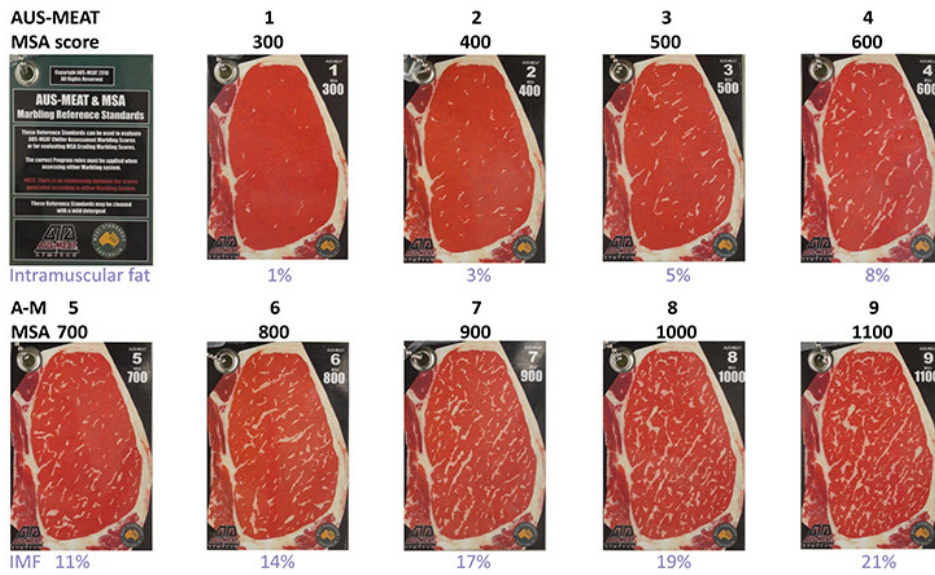


Figure 6: Australian meat grading; AUS-MEAT MSA Score (Wagyu International, 2016)

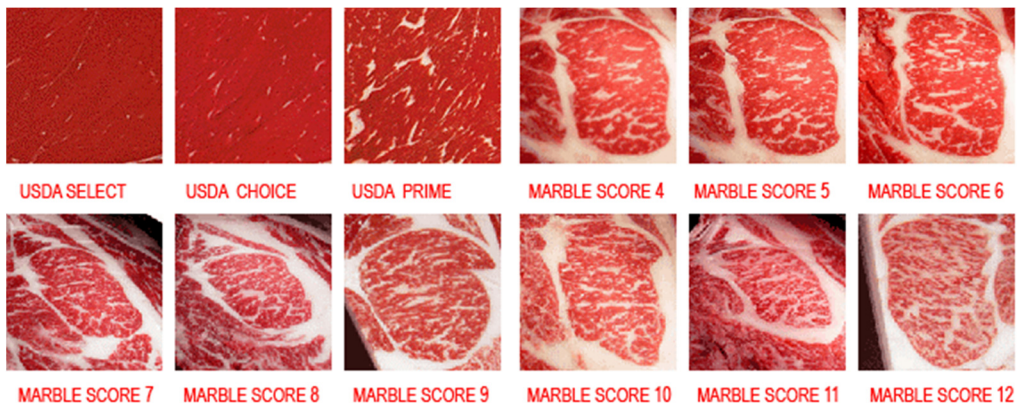


Figure 7: US grading meat grading; USDA Grading (The Kobe Beef, 2016)

4.0 Method

When thinking about the future of the NZWI there are multiple facets that I sought to consider;

- On farm – animal welfare, feeding regimes, genetic selection, organic vs conventional
- Supply chain – animal welfare, food safety, ability to supply
- Consumer – branding, labelling, markets/marketing, preferences
- Environment – environmental practices and impact, clean & green
- Industry – funding, collaboration, technology & innovation

In order to come up with sound information on the above I looked at the following as a framework for analysis of the industry;

- Survey of NZ Wagyu farmers using Survey Monkey
- Interviews with key decision makers and influencers
- Literature reviews around the key themes as part of the research topic
- Industry analysis;
 - Porters Five Forces
 - SWOT

4.1 Survey

In order to get a feel for the industry I put together a survey using the web-based Survey Monkey which contained a number of key questions grouped into the following sections:

- *Description of yourself/business*; who is filling in the survey and in what capacity, time involved in industry, percentage of income derived from Wagyu (if any)
- *Industry Focus*; where should the industry be focusing in order to be successful, is scale an issue, is there a need for more technology in the breeding/genetics part of the industry
- *The Future/Markets*; biggest gains to be successful, concerns holding the industry back, SWOT analysis questions
- *More, Better, Different, Less*; what would you do differently if you started farming Wagyu again, any insights that have been missed

A link to the survey was then emailed out to as many people involved in the industry as possible, the survey contained 26 questions which are attached in Appendix 1, a total of nine responses were received.

4.2 Interviews

I physically met with five people involved in the industry to garner a better understanding of what their thoughts were, these included past and present Presidents of both associations as well as breeders and growers.

The interviews were mostly done in person and required a certain amount of generative listening in order to fully understand some of the viewpoints of long-time NZWI members.

All of the people who were interviewed also filled in the survey so their views are also captured in that data.

4.3 Literature Review

I undertook a review of a number of articles of literature and websites which feature throughout this project but in particular;

1. What's Possible? A look into the future of grassland farming in New Zealand.

Paper for the New Zealand Grassland Association in 2003 which sought to consider the forces that will shape grassland farming in NZ including looking at changes in consumer needs, international competition in commodity food production, national regulations for sustainable resource management, global biotechnology advances, biosecurity threats and climate change. Particular attention is given to the role of innovation to create biotechnology and high value products (functional foods, therapeutic proteins etc.). A Five Forces analysis was done on the emerging future trends predicted to impact grassland farming in NZ over the next 15 years.

2. Determining Customer Perceptions of and Willingness to Pay for Appalachian Grass-Fed Beef: An Experimental Economics Approach.

The focus of this paper in the 2011 Agricultural and Resource Economics Review 40/2 for the North-eastern Agricultural and Resource Economics Association was to use an in-store (supermarket) variant of the Becker-DeGroot-Marshack experiment to purchasers' preference for grass-fed beef from the Appalachian region.

3. A Comparative Study of the Sources of Competitive Advantage in the New Zealand and Uruguayan Beef Industries.

This thesis as part of a Degree in Master of Applied Science analysed the two similar beef industries in the face of a new consumer driven environment; demand and willingness to pay for high quality, convenience food with nutritional value as well as other additional information about how the food was produced. The study went on to look at product differentiation, certification of origin labelling, convenience products, organic and natural certified products as well as marketing channels and special market segments.

4. Meat produced by Japanese Black cattle and Wagyu.

This research paper presented in the journal Animal Frontiers by 5 Professors and Associate Professors at four of Japans leading universities looked at the meat quality and grading of Wagyu cattle from a Japanese point of view. Although it didn't seek to answer a specific question/s, it gave a well-researched view into the different characteristics of Wagyu cattle and why they are so unique.

5. A Review of fatty acid profiles and antioxidant content in grass-fed and grain-fed beef.

A review paper looking at over 30 years of research on whether or not grass-fed is better for you than grain-fed, the chemical makeup and differences between grass-fed and grain-fed beef, the research suggested there is a considerable amount of support that grass-based diets of beef cattle produce healthier products.

6. The Hunt for the Missing Billion: NZ's Dairy Beef Opportunity.

This was a Kellogg research project on the opportunity for the NZ beef industry to benefit from the NZ dairy industry, it looked at a SWOT analysis, value chains and opportunity to further develop these.

7. Progress Review of the Marbled Grass-fed Beef Primary Growth Partnership (PGP) Programme.

A full review of the \$23m PGP between the NZ Ministry for Primary Industries (MPI) and FLF which started in August 2012 with a focus on positioning NZ grass-fed marbled beef at the premium end of international markets in order to deliver an increase in the GDP of NZ of \$200m by 2029. The objectives were to review what progress had been made in terms of project outputs, internal and external factors affecting the projects, likely benefits and future direction.

8. Pursuing the global opportunity in food an agribusiness.

An article written by McKinsey & Company looking at the major trends currently happening in the food and agribusiness value chain and potential opportunities for investors. Identified trends included:

- Population growth, urbanisation and increased income in emerging markets

- Demographic and behavioural change in mature markets
- Productivity focus; depletion of resources, climate volatility
- Industry structure changes with a bigger gap; very large enterprises as well as smaller boutique/niche businesses
- Price volatility; use of hedging mechanisms
- Big data and information gathering

Potential opportunities for investment were also identified including one of the biggest in the agri-food sector of the huge protein demand in China. (Appendix 3)

9. The Top Ten Food Trends.

As the title suggests this article investigates the top 10 food trends currently happening, while somewhat similar to that of the McKinsey article above, there are subtle differences; the author suggests that the industry is spending too much time chasing the Millennial dollar and that it should get back to everyday consumer needs; changing lifestyle trends and food/flavour preferences. A taste of the top ten are:

- Shift to fresh and refrigerated foods
- Lifestyle meals; eating for one, packaging, eating on the run
- Meal snacks; convenience, different times to buy different snacks
- “Discovery”; new sophisticated products/brands, new varieties of traditional
- Exclusion Diets; gluten-free, lactose-free, raw/living foods
- Whole food nutrition, Diet watching meals/foods
- “Cook-less” meals, no preparation, microwave/oven

10. Agribusiness Agenda 2016 – Volume 1: Thriving in exhilarating times

Put out by KPGM, one of the “big four” accounting firms, the Agribusiness Agenda seeks to provide clarity on what is driving current and future trends and where we should be looking to take advantage of these.

11. 25th Annual Report of the Australian Wagyu Association (AWA) 2015.

The latest annual report available for the AWA, through the CEO’s update gives a number of insights into the Australian industry and their corporate focus through a Strategic Plan for the next 10 years. Included is a Mission Statement as well as a 4 key Corporate Goals and how they plan to achieve them:

- **Product Improvement:** Increase the rate of genetic gain and product performance in the Australian Wagyu Industry.
- **Marketing and Communications:** Increase demand for Australian Wagyu domestically and internationally in all sectors of the supply chain.

- **Wagyu Integrity:** Increase the market integrity of Wagyu domestically and internationally.
- **Corporate Services:** Increase the efficiency and effectiveness of the AWA administration and services.

4.4 Industry Analysis

Porters Five Forces

I conducted an analysis as to the potential success of the industry using Porters Five Forces analysis. This is a framework originally put together by Michael Porter of Harvard University to analyse the level of competition and profitability and therefore the attractiveness to invest within an industry (Wikipedia, 2016).

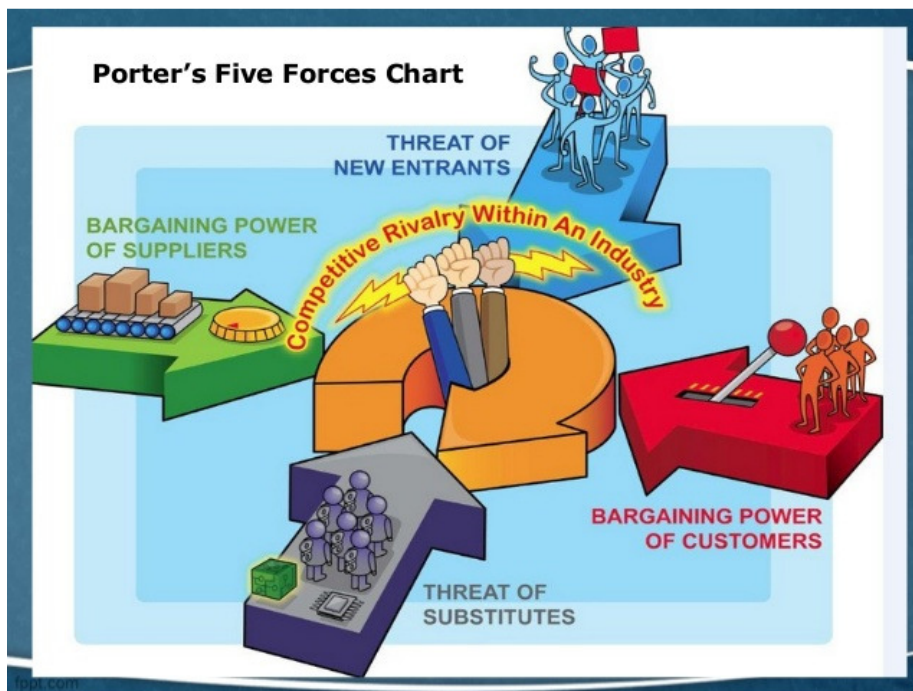


Figure 8: Porters 5 Forces (The Caterpillar Clubhouse, 2016)

The parts that make up the analysis are centred around the competitive rivalry in an industry, in no particular order these are;

- Threat of new entrants
- Bargaining power of buyers

- Threat of substitutes
- Bargaining power of suppliers

A marketplace assessment tool developed by Purdue University’s extension team at the Agricultural Innovation & Commercialisation Center (Ehmke, Fulton, Akridge, Erickson, Linton, n.d.) was used to look at the NZWI based on a number of questions related to each of the above.

SWOT Analysis

An essential part of any strategic analysis, SWOT being an acronym for Strengths, Weaknesses, Opportunities and Threats, this is perhaps the single biggest piece of analysis in this report.

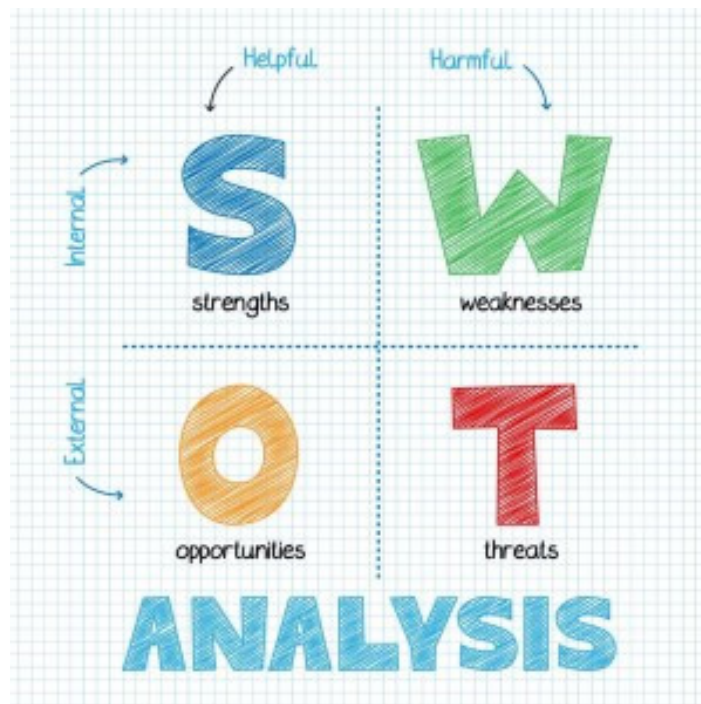


Figure 9: SWOT Analysis (Abudi, 2016)

A SWOT analysis is broken down into internal and external factors, and those which are helpful and harmful (positive & negative), from this we can create a picture as to where to focus in order to have continuous improvement.

5.0 Results, Findings & Discussion

5.1 Survey

The survey was sent out in October 2016 and at the time of writing there had been nine responses, of the responses approximately half were anonymous with the other half happy to be associated with their answers. Overall the low number of responses doesn't necessarily represent the whole industry as would have been liked in order for the answers to have a higher impact, however it does provide some insight as to the perceptions from within the industry.

The first part of the survey was around a description of the participants and their farming interests, of the nine survey responses over 60% were from those aged over 50, with 13% between 36-50 and 25% 21-35. This gives you an idea of the demographic of those involved in the industry, every participant was a farmer/farming in some way with an even 50% split between it being described as "a part of my business" and "a small part of my business".

In terms of the actual farming of Wagyu, only one response indicated that it was their sole farming income (from a beef sense, i.e. they might also run some sheep), following on from this and adding to the picture built above only one response indicated that farming Wagyu cattle was between 50-75% of their income, the remaining eight responses (88%) indicated that it was between 0-25% of theirs. This is seen as important as it may help to explain potentially why the industry has not gone ahead as fast as others.

The question "Do you see farming Wagyu in particular as a hobby or business?" was asked using a Likert scale. With participants answering 1- 100, with 1 being a Hobby and 100 being a business, the average result from all responses was 60, the devil is in the detail though in such a small number of respondents; one person selected 1 (Hobby only) while the remaining range was from 50-88, if the lowest response was removed as an outlier the average on the remaining eight responses would have been over two thirds (69%).

Out of all responses it was interesting to note that 50% had a farming related degree or higher education, this would be seen as a higher percentage than that of the farming industry in general, some potential reasons might be that due to Wagyu being perceived as a superior or premium product it might attract those that potentially are well educated and themselves demand similar types of product so are naturally attracted to start with.

The second part of the survey was around an industry focus; in terms of time involved in the industry there were mixed answers with 25% of responses indicating they'd been involved under a year, the same was for involvement of 1-5 years, one for 5-10 years and the remaining three responses indicating they'd been involved for more than 10 years/from the start.

In terms of perceptions of their own industry knowledge, one person said that they were “very knowledgeable” on the NZWI, three were “somewhat knowledgeable”, the same for an “average knowledge level” with one response indicating that they were “not very knowledgeable”.

Following this participants were asked “Do you think the industry is currently on the path to success?”, with 1 being “Nowhere near being a success” to 100 being “Definitely on the path to success”, the average came out at 55 with a range of 0-100, similarly to above if the lowest score (0) was left out the range would have been 30-100 with a new average of almost two thirds.

Due to the nature of the Wagyu animal specifically with the history of breeding and genetics the question was asked about where the industry should be focusing in terms of the level of “Wagyu” in the different products (e.g. FB, PB, F1+). The question “Do you think the NZWI should be focusing on a FB product (vs cross bred)?” was asked with the average being 65 (on a scale of 1 being Cross bred and 100 being Full blood), with 7/8 respondents over 50, if the lowest (at 11) was removed the new average would have been 75%.

The results of the next question where somewhat surprising; “Do you think the industry should be focusing on an organic product (vs conventional)?” with 1 being Conventional and 100 being Organic, respondents’ average answer was 46, only seven responses were received for the question with 2 people each opting 100% for one or the other. Reasons for this might include the “organic” fad may be slightly waning as has been suggested in some circles (Sloan, 2015) with new “health and wellbeing” type products starting to be used or it might just be a sign of the state of farming with a very low percentage actually using organic practices or even being certified and therefore do not think it is important.

The answer to the above could lie in the next question “Do you think the industry should be focusing on a Sustainable Product?” with 1 being “Don’t think it matters” and 100 being “Sustainable”. From seven responses the average answer was 76 indicating a strong preference for sustainably produced food, again though there was an outlier at zero with “Don’t think it matters”, if this was left out the average would come out at 89%. Again as above part of this could come down to terminology that is being used in everyday life by retailers and providers, it does though lead to the further question of what Sustainable actually means. From a future-proofing and marketing point of view if producers and farmers are wanting to produce sustainable food then logically if there was an industry or government certification process and brand (similar to that of Irelands Origin Green) then it stands to reason that consumers would be more inclined to purchase those particular products (Sloan, 2015).

Shoppers underlying motivations for purchasing

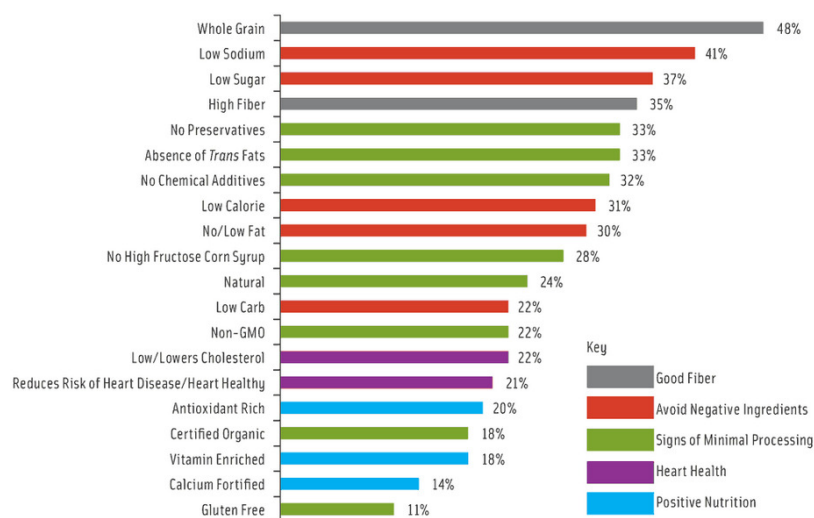


Figure 10: Source; Sloan (2015), from Food and Marketing Institute, U.S. Grocery Shopper Trends, 2014

When asked about industry collaboration “Do you think the industry needs to come together and have scale for success?” on a scale of 1 being “Small is good” to 100 being “We need scale” the average response was 67 from eight responses, with a range of 0-100, if the top and bottom responses were removed the average would have been 73, only two responses were below 50 (0 & 36).

The next question was somewhat similar to the one above however with this question respondents were able to select more than one answer; “Is the industry able to be successful in different ways with differentiated products and markets? (e.g. FB, PB, F1+)”, seven respondents to four possible answers were; 1. “There is room for all” (to which there were six responses), there were no responses to “we all need to focus on one product”, likewise there were no respondents that selected “we need a single marketer/brand (e.g. Zespri)”, lastly there were three responses to “we need different brands”.

The next two questions were around the ability to increase the genetic merit of the NZWI; “Do you think the industry needs to embrace artificial breeding and selection techniques more? (e.g. as in Australia)” to which eight respondents selected “Yes” with the remaining respondent selecting “No”, no responses were for the answer “We’re doing OK”. Following on from this people were then asked if they thought there was currently the ability to do so in NZ to which eight responded “Yes” with one response for “No”.

The next part of the survey was more subjective asking respondents to give their view on what the industry should be doing from More, Better, Different and Less points of view, initially the survey was set up so that this question was optional, after the first three participants skipped the question it was changed to mandatory, therefore it would be worthwhile to be asked again to those that did not answer initially.

A summary of the key themes in the six respondent's answers were:

More

- Education on the benefits of Wagyu meat for consumers
- Communication among breeders and networking
- Stock numbers to get scale
- Branding around FB, PB and grass-based products

Better

- Use of breeding techniques to increase herd numbers
- Labelling of products to enable consumers to make informed choices
- Industry registration of cattle
- Pricing and product returns (development of markets?)

Different

- Promotion of Wagyu fat being better for you and the differences to standard beef
- Labelling
- Brands

Less

- Competition and friction within the different parts of the industry
- Grain and feedlot (e.g. more grass-fed)

The last part of the survey was around the future and markets, the question "In your opinion, what are the biggest gains to be made in order to have a successful industry?" was asked to which the following summary of responses was collected;

- Promotion and development of local markets; retailers, restaurants eventually supermarkets
- Development of sustainable brand/s and marketing under one industry breeders association
- Top quality genetics being used

Respondents were also asked about the thoughts on whether or not there was a role for government to help the industry get on its feet, of the nine responses, three answered "Yes" while the remaining six answered "Maybe", no responses were received for "No".

The next question asked participants what their biggest concern that needs to be addressed in the industry is, again this question was not compulsory initially so only five responses were received which are summarised as:

- Friction within the industry, over dominance, labelling of products (use of "Wagyu" name)
- Lack of appreciation by NZ processors of the breed, and to recognise the higher quality carcass in an appropriate grading system
- Focus on grass-fed and sustainable products

Participants were then asked what their thoughts were on the biggest Strengths, Weaknesses, Opportunities and Threats to the NZWI, these are summarised as:

Strengths

- Better return than average beef
- NZ's clean green image and ability to grass feed
- A number of small players wanting to get bigger (seen as go ahead)
- Some good stock already in the country with which to build on

Weaknesses

- Marketing and lack of local perceptions/awareness of Wagyu meat
- Lack of scale
- Historical dealings within industry negatively affecting communication today

Opportunities

- Promotion of new brands and export of high quality NZ product, niche opportunities

Threats

- Labelling and misrepresentation of product (locally and internationally)
- Increasing scale of other markets squeezing out NZ producers
- Lack of NZ supply

Participants were then asked if they were to start again in the industry what they would do differently, again of the five responses that had to answer the question three said that they would look at using at least PB stock but preferably FB animals (rather than cross bred which could be done at any time).

Lastly participants were asked to leave any comments they thought about the survey or if it was missing anything and as the survey was anonymous, to leave their contact details if they would like to see the results of the survey (with the answers still remaining anonymous).

5.2 Interviews

The interviews with respected leaders of the industry highlighted a number of themes/areas that require further attention.

Most notably the NZWI has up until now been somewhat floundering due to a lack of trust between industry players which originated from the dishonesty and self-interest of some parties in the early days, this has hampered co-operation for many years and still lingers today. In all occasions where this was highlighted as a major issue the comparison was made with the Australian industry as to where we could potentially be.

All of the interviewees said that they thought the industry was now experiencing a resurgence; this was partly put down to the modern food culture that NZ now has (including dining out at restaurants), the desire for high quality food products and for people seeking to diversify their income streams with premium products.

The current lack of scale both in terms of grower numbers and also animals on the ground was also a big issue and somewhat aligned to the above, with new breeders looking to enter the industry this was seen to be somewhat being addressed however it has a long way to go. In one of the interviews it was suggested that we should make the most of our small scale and try and have a boutique product from a small number of growers as it is easier from some perspectives (e.g. quality assurance and quick decision making).

Another common issue was around product labelling both in NZ and offshore, the FLF product was mentioned on several occasions as it is labelled as Wagyu when it is in fact an F1 or higher cross with the purists in the industry seeing this as wagyu sacrilege that will only serve to decrease the value of products which carry the Wagyu name. This labelling is practiced in overseas markets such as in the US where the term “American Wagyu” refers to an animal that is normally F1 cross of a Wagyu and for the most part Angus, likewise in Australia with the “Australian Wagyu”.

Along this same thread the interviewees all thought that there was room for all types of Wagyu products in the market including PB and F1 or better crosses provided labelling was changed to reflect what the actual product being sold was.

Another key theme was around the opportunity to get better genetics in the industry, again most mentioned the Australian industry as to where we should look to be or piggy back on to increase the genetic potential of the NZ herd, the Australian Wagyu Association (AWA) allows overseas members however this could change at any point in time and there is therefore a risk around information security and transfer.

5.3 Five Forces Analysis

I performed a Porters 5 Forces analysis based on Purdue Extensions marketplace assessment tool with points in red considered a high threat/risk, green considered a positive/low threat or risk and blue could be either/unknown:

Threat of New Entrants

- There is no unique process followed which affords a barrier to entry
- There are high start-up costs (purchasing livestock, availability of land, knowledge, supply chains, intellectual property)
- The assets needed to run the industry are not unique (land, water, labour), however brands, markets, knowledge are difficult to create
- There is not a single process critical to the industry
- A new competitor may have trouble sourcing inputs (namely livestock)
- A new competitor may have trouble finding customers, complex distribution channels exist
- It may be difficult for a new entrant to compete at an efficient level of production

Threat of Substitutes

- The NZWI product compares favourably to other possible substitutes
- It is not costly for customers to switch to other products
- Customers are loyal to existing products in the premium space

Bargaining Power of Suppliers

- There are a large number of current and potential suppliers
- The inputs needed for production are standard and not unique
- Purchases from suppliers are only a small part of the suppliers overall business
- It would be difficult for suppliers to enter the industry and pull everything that is required together
- Substitute products from other suppliers are quickly and easily available

Bargaining Power of Customers

- There are few customers/buyers in the market (that are paying a premium)
- The industry products represent a large expense relative to what would normally be spent
- Customers are not overly informed about the Wagyu product
- The products are generally unique (grass-fed)
- It would be difficult for customers to produce the product themselves
- It is somewhat easy for buyers to switch between products (however not necessarily grass-fed)

Rivalry among Competitors

- There are only a small number of competitors (grass-fed)
- There is no clear leader in the market (product dependent)
- The market is growing
- Fixed costs are low compared to competitors in feed lot farms (grain-fed)
- Although products can be stored, due to their premium nature they are served fresh/chilled however this is similar for all competitors
- Products are (generally) unique when compared to others
- It would be easy and cheap for competitors to leave the industry
- It is not difficult for customers to switch between competitors' products (however with a grass-fed product there are not a lot of producers)
- Market share in the industry is not equally distributed (grass-fed advantage in NZ)

In summary, the threat of new entrants is assessed as **LOW-MEDIUM** risk, this can be reduced by enhancing the marketing and brand image as well as setting up partnerships with other suppliers (e.g. Fonterra and Silver Fern Farms' Kotahi shipping partnership).

The threat of substitutes is assessed as **LOW** risk. This can be further reduced by differentiated product branding/marketing (grass-fed, healthier) and with collectives formed within the industry.

The bargaining power of suppliers is assessed as **LOW** risk. This can be further reduced by forming alliances with other industry partners in order to reduce costs of inputs (e.g. Farmsource dollars for Fonterra farmers).

The bargaining power of customers is assessed as **MEDIUM** risk. Things that can reduce this include increasing the amount of buyers in the market by looking at different marketing channels, through partnerships or loyalty programs and by increasing the perceived value of the product through branding and/or with different features and benefits (e.g. ready meals).

The rivalry among competitors is assessed as **LOW** risk. To reduce this further there is a need to become a leader in the market with a clear brand, finding product differentiation and distribution channels.

Back to the future:

Campbell (2003) came up with the following opportunities for reducing future competitive forces on New Zealand farming of which some can be applied to the NZWI:

	Trend
Reducing the Bargaining Power of Customers	<ul style="list-style-type: none"> • Partnering • Supply chain management • Increase incentives and value added • Move purchase decision away from price • Cut out intermediaries
Reducing the Bargaining Power of Suppliers	<ul style="list-style-type: none"> • Partnering • Supply chain management • Build knowledge of supplier costs and methods
Reducing the Threat of New Entrants	<ul style="list-style-type: none"> • Increase efficiency • Create a marketing/brand image for loyalty • Patents, protection and intellectual property • Tie up with distributors • Alliances with linked products and services
Reducing the Competitive Rivalry from Existing Players	<ul style="list-style-type: none"> • Avoid price competition • Differentiate product • Reduce industry overcapacity • Focus on different segments
Reducing Threat of Substitutes	<ul style="list-style-type: none"> • Legal actions • Increase switching costs • Accentuate differences

Figure 11: Opportunities to reduce competitive forces on New Zealand farming

5.4 SWOT Analysis

A SWOT analysis for the industry shared many of the previous themes and issues that the survey, interviews and Five Forces analysis uncovered, this is encouraging as it reinforces these so that the appropriate solutions can be found.

Strengths

Perhaps the biggest strength and possibly point of difference of the NZWI is that it is by and large a pasture based industry when compared to others around the world. There are currently moves to what is seen as being more “sustainable” and at the top of this list seems to be that a growing number of consumers are wanting grass-based food products as they are perceived to be healthier, there have been multiple studies based on different food products which show a preference for grass-based food (including Evans et al, 2011).

Daley et al (2010) in their study entitled “A review of fatty acid profiles and antioxidant content in grass-fed and grain-fed beef” made the following conclusions:

“Research spanning three decades supports the argument that grass-fed beef (on a g/g fat basis), has a more desirable SFA lipid profile (more C18:0 cholesterol neutral SFA and less C14:0 & C16:0 cholesterol elevating SFAs) as compared to grain-fed beef. Grass-finished beef is also higher in total CLA (C18:2) isomers, TVA (C18:1 t11) and n-3 FAs on a g/g fat basis. This results in a better n-6:n-3 ratio that is preferred by the nutritional community. Grass-fed beef is also higher in precursors for Vitamin A and E and cancer fighting antioxidants such as GT and SOD activity as compared to grain-fed contemporaries.

Grass-fed beef tends to be lower in overall fat content, an important consideration for those consumers interested in decreasing overall fat consumption.”

The second major strength identified multiple times is that of NZ’s clean and green image and alongside this our physical farming resources, climate and environment.

Rightly or wrongly NZ has long held a reputation as being clean and green. This is partly due to historical advertising campaigns (100% Pure NZ) however it is also acknowledged that when compared to overseas countries, tourists that travel through NZ generally see more natural beauty and overall cleanliness compared to their own countries. While this in itself does not necessarily mean that NZ is clean and green, image and perception means everything.

Along a similar vein the physical resources of NZ make it ideal for food production - for the most part there is a temperate climate with reliable rainfall, good soils etc., as well as this and another strength is that of the generally good farming practices and being world leaders in many fields (in particular pastoral farming). The above also contributes to a low cost way of farming when compared with other countries although this has been challenged in recent times (e.g. in the dairy industry with farmers bringing in large amounts of imported feed during high dairy pay outs), again though the NZ system goes back to the grass-based and low cost of production system compared to other more intensive parts of the world.

Another strength is around the people and businesses involved, all spoken to as part of this research were looking to grow their stake in the industry despite some tough times experienced in the past, one of the reasons for this could be that the majority of those involved are also doing other things outside of the Wagyu industry and therefore are not reliant on that income.

Lastly as a country, consecutive governments have strived to achieve preferential market access through trade deals and forming strong relationships with our customers, this is a somewhat undervalued strength of our industry for those involved who potentially see it as a given. When compared to other countries around the world (e.g. Argentina) it is a huge asset.

Weaknesses

The biggest weakness for the industry is the lack of scale both in terms of a lack of actual numbers of people and businesses within it and also from a stock numbers point of view. Along with this is a currently limited fully integrated supply chain.

There are very few Wagyu animals and even less breeders when compared to other breeds such as Angus and Angus/cross combined which make up circa 21% and 33% of the NZ beef herd respectively, these are followed closely by Hereford at 9% (adapted from Peden, 2016).

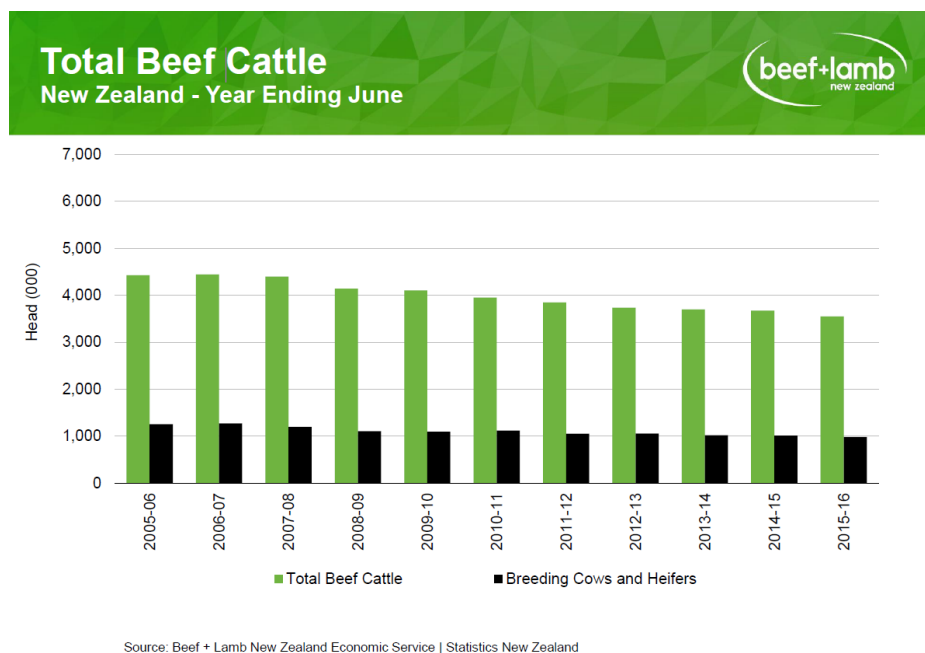


Figure 12: Beef cattle numbers in New Zealand

While there is no solid data on the number of cattle in NZ of Wagyu origin it is generally accepted to be very low (estimated at <20,000 including F1 and above), as can be seen by the above graph this pales in comparison to the circa 3.6m total beef animals, these low numbers and subsequent weakness have an impact in a number of areas:

- Difficult to establish a large and consistent enough supply (restaurants and butchers within NZ, export markets)

- From a processing point of view there are limited options for being able to process small numbers especially where it needs to be guaranteed product e.g. 100% FB Wagyu meat
- Branding and marketing is costly from a straight out breed point of view, limited capital to grow
- Gene pool creates challenges with line breeding

There is still a sense of mistrust between different players and parts of the industry which goes back to the early days where a number of investors were impacted by other industry participants with poor ethics.

Similarly there is poor and/or limited communication and cohesion between different parts of the industry and although it is improving there is a long way to go to bring the industry together and create a platform for communication. This is likely to be somewhat of a function of the above early challenges in the industry.

Another weakness is around the brand awareness and lack of a “story” of NZ Wagyu, this also dovetails into the labelling of Wagyu meat within NZ. Apart from FLF which mainly sells offshore, there is no real Wagyu brand within NZ that consumers can pick up at their local butcher or supermarket or order at their favourite restaurant. As part of this is the labelling laws in NZ which do not discriminate between F1 animals and those that are FB or PB; currently an F1 animal can be labelled as “Wagyu” when it is only 50%, this point was made a number of times in the survey and interviews and is an issue in NZ as well as our export markets. These markets are also coming to terms with Country of Origin labelling (COOL) and therefore there may be some changes coming which will address this current weakness.

Lastly the lack of a sizable local market for Wagyu beef means that it is tough for the industry to focus on a particular area (local vs export), this is compounded as Wagyu as a breed is a higher value product and therefore for the most part wealthier consumers are purchasing Wagyu products.

Opportunities

The single biggest opportunity for the NZWI to get right currently and also to take advantage of increasing global wealth (and the shift from lower to middle and middle to upper classes) is that of creating a story and brand based on a healthy, sustainable product. This could utilise some public sector and other industry good funding (e.g. Beef + Lamb NZ PGP – Red Meat Profit Partnership) and/or resources such as through Beef & Lamb NZ and their Market Development Action Plan, Integrated Visual (Appendix 4).

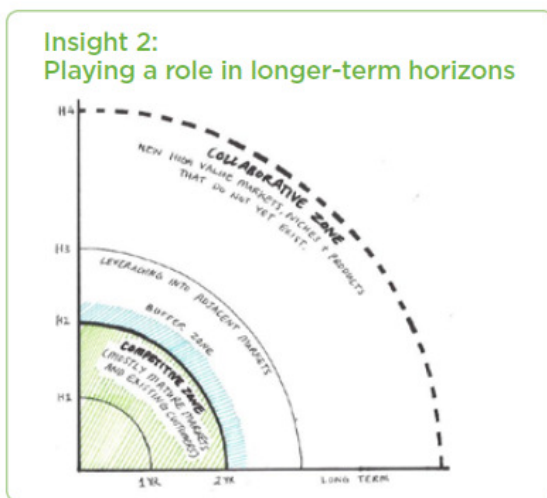
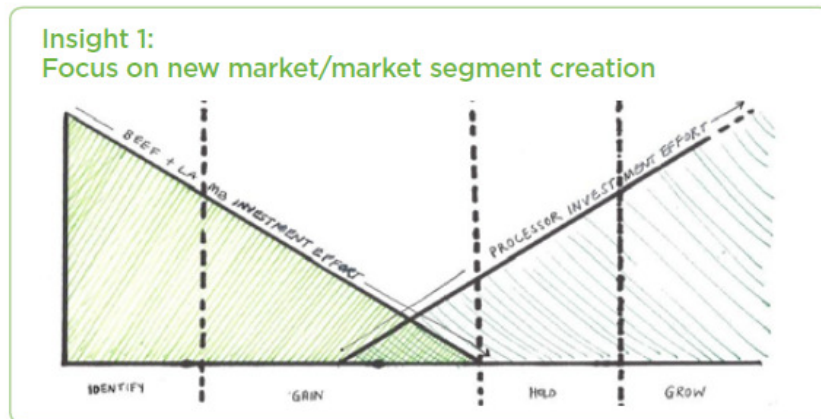


Figure 13: Beef + Lamb NZ Red Meat Sector Market Development Action Plan (2015)

McKinsey in their July 2015 article titled “Pursuing the global opportunity in food and agribusiness” said “Consumers are increasingly health conscious and place greater importance on environmental sustainability, most visibly in developed countries but more and more in emerging markets. In response, governments are tightening standards for food production. As a result, demand is rising for healthier functional foods (those that offer benefits beyond basic nutrition, such as lowering cholesterol) and for traceable and certified foods that are guaranteed to meet a certain level of safety and environmental or corporate social responsibility.

Producers and food companies that embrace more stringent environmental and social standards, organic-certification requirements, and traceability standards should be able to better position themselves in the face of evolving regulation and continue to grow to take advantage of this trend. For example, in 2010 Unilever announced plans to source 100 percent of its agricultural raw materials sustainably by 2020, and, as of the end of 2014, had reached 55 percent. Food-and-beverage companies can also profit from products with specific fortifications and nutrients to appeal to the health-conscious segment (for example, omega-3–fortified milk).”

Part of this opportunity is around the ability to effectively create demand (e.g. Kiwifruit through Zespri) for a product/products, as an example celebrity chef Gordon Ramsey has opened an airport restaurant with takeaway food for flights run by a Michelin starred chef serving high class meals, potentially this could have Wagyu on its menus. Within NZ there is an opportunity for this demand with product offerings such as My Food Bag, local producer groups, high end restaurants and markets as well as internet sales platforms selling fresh/chilled foods for immediate consumption.

From a technological point of view a large opportunity exists to develop the breeding and genetic potential of the NZ herd through the use of modern breeding techniques such as embryo transfer and potentially GM and cloning further down the track (cloning is currently available to farmers in the US). The NZWI could potentially piggy-back on the AWI which has as a corporate goal to *“Increase demand for Australian Wagyu domestically and internationally in all sectors of the supply chain”*, one of the key parts to the AWI’s vision within the next 10 years as part of their Strategic Plan is to *“Be recognised as the number one source of the world’s elite Wagyu genetics, breeding livestock and beef products outside Japan”*. (Australian Wagyu Association 26th Annual Report 2015, 2015)

Potentially most difficult but by no means impossible, there is a large opportunity around the industry coming together as one (e.g. Zespri but not necessarily the same structure) in order to; create a brand and develop markets, have economies of scale, do research, develop new products, implement a vertically integrated supply chain and deliver real value and income to the industry.

Lastly with the modern world moving more into an online market place, an opportunity exists to connect livestock buyers and sellers together in one place specifically for Wagyu animals similar to TradeMe or Stock-X, this enables a single portal which would give the market an up to date price as well as further connect the industry.

Threats

There is no one threat that stands out over and above the rest however there are a number of threats that need to be understood and taken into consideration in the fast-paced world in which we now live:

- Scale of other markets; in particular Australia and the US who could push NZ out (more so from a grain-fed/feedlot type of product).
- Plant-based and cultured meats which would act to displace other products on the market which could potentially therefore also reduce the value of higher end products.
- Similarly to above the vegan movement, animal activists, vegetarianism and social changes which have exploded with the help of social media, instant communication modes could de-stabilise livestock production globally.
- Environmental concerns such as carbon footprints and food miles present challenges to agriculture worldwide due to its intensiveness of resource use.

- Labelling and product differentiation e.g. what does grass-fed actually mean; how long does it have to be on grass, at what part of the animals life etc., this will come down to managing consumer expectations.
- Changing consumer preferences, sugar vs fat etc.

Overall there are a number of key Strengths, Weaknesses, Opportunities and Threats which are summarised in the following table:

<ul style="list-style-type: none"> - Grass-fed advantage (healthier, premium product) - Clean & green image - Physical farming resources, climate, environment - Good farming practices - Low cost - Small & nimble, ability to move fast - Industry players all looking to grow - Access to markets; politically, trade deals <p style="text-align: center; font-size: 48px; color: blue;">S</p>	<ul style="list-style-type: none"> - Small scale, lack of supply (low animal numbers) and supply chain - Historically poor ethics, low trust - Communication between industry players (farmers, breeders, associations) - Marketing/getting story out there - Genetics and recording of breeding - Lack of capital to grow - Labelling within NZ - Distance to sizeable markets (small locally) - Small scale farms <p style="text-align: center; font-size: 48px; color: blue;">W</p>
<ul style="list-style-type: none"> - Selling and Marketing a story - Building on current image - Ability to bring in outside Genetics (GM trials, cloning) - Niche products (Gordon Ramsey airport restaurant) - Coming together as an Industry (Zespri) - NZ local market (restaurants, markets, high end specialty stores, internet sales) - Specialist Wagyu online livestock auctions <p style="text-align: center; font-size: 48px; color: blue;">O</p>	<ul style="list-style-type: none"> - Labelling and product differentiation (what does grass-fed actually mean) - Australian & US markets using their scale to push NZ out - Plant based and cultured meat displacing other meats and reducing value of animal sourced proteins in general - Animal activists; Vegan movement, vegetarianism, social changes - Environmental challenges (carbon footprint, food miles etc.) - Substitutes (other meats, other countries meats) - Changing consumer preferences <p style="text-align: center; font-size: 48px; color: blue;">T</p>

Figure 14: Summary of SWOT analysis for the New Zealand Wagyu Industry

6.0 Conclusions

It is clear that there are a number of issues surrounding the current state of the NZWI which will affect what path it takes and at what pace in the future.

While there is no single answer that can be given to where the industry goes, there are definitely areas that can be focused on to achieve more of its potential.

From an internal point of view it is fair to say that the industry has some skeletons in the closet which are in some ways still holding it back with a sense of mistrust, this seems to be exacerbated due to the small number of breeders and farmers in the industry. To move forward there is a need for industry collaboration.

Similarly the small scale of the industry is probably one of the bigger weaknesses for a number of reasons. Conversely however due to the small number of breeders and farmers the industry can be quick and nimble to move with the times.

It was identified that there are concerns around product labelling that influences purchasers' perceptions of products around what a product actually contains and the perceived benefits or otherwise of that product, this was seen on multiple websites overseas in the page blogs of the products being sold.

There is huge potential to add value in creating a brand or story for products. Given that Wagyu is a premium product and that consumer preferences are moving into an area where they want to know the back story and provenance behind what they are consuming, there is more value to capture if it is done right. As well as this but on an international scale, the move to grass-fed food products is experiencing unprecedented growth, while this could be just a fad, it could also signal a real long-term shift in preferences for products that are seen to be more environmentally friendly and sustainable.

Another large opportunity exists with building the cattle numbers in NZ through using well proven genetics from overseas, there is no point reinventing the wheel with the Australian industry being market leaders in terms of their breed association and all things Wagyu, therefore it makes sense to utilise their resources especially given that their breed association wants to share resources.

7.0 Recommendations

There are four key areas for recommendations that would move the NZWI forward successfully:

1. Collaboration - The industry needs to pull together and form a strong breed association which can be used as a base for planning future change from.

This could be modelled on one of many around the world however to be successful everyone needs to be involved, potentially this could look like a co-operative or a Zespri type of structure, or it could be that an Origin Green style of branding is formed by the association and implemented.

2. Disruption – Create a story and brand behind the product and look to develop new products and markets to challenge the status quo of the wider industry, in particular this should be focused on the strengths of the NZ industry (low cost, grass based, sustainable farming).

Once the industry is able to pull together and achieve some cohesion, it will then be able to get some economies of scale in order to satisfy the markets with consistent, high quality products, part of this equation is the need for capital investment and the potential for further Public-Private partnerships. There is strong global demand for protein and as the worlds population gets wealthier and moves from one demographic to another individual demands shift to more premium products. The NZWI needs to own this space.

3. Genetics – The industry should partner with the Australian Wagyu Breeders Association (as they are with the American Wagyu Breeders Association), their point of difference is low-cost grain fed, this doesn't have to be a competing product (although its easy to see how it could be).

The AWA has a goal of becoming the supplier of choice for all parts of the Wagyu supply chain, they are wanting to trade their genetic material and be seen as the go-to supplier globally.

4. Market place – The industry should come up with an online portal to enable Wagyu producers around the country the ability to sell their animals remotely and securely to others without people or cattle having to physically be at a sale venue.

This online market place could be run alongside an existing operation through a reputable company, enhancements with the future of technology in the industry could see the market place have carcasses for sale similar to a seafood market where you buy on graded quality that has been certified (vs buying live animals where the technology is still in its infancy to confirm quality characteristics).

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Appendices

Appendix 1 – Survey

This survey has been put together by Michael McGehan as part of a Kellogg Rural Leadership Project entitled The NZ Wagyu Industry – Where to from here to succeed?

The purpose of the survey is to gain an understanding of the thoughts of the people involved in the wider industry as to how can it move forward to be successful. The findings will be presented in a report as well as a presentation to be made to the course participants and Kellogg industry partners, if you would like to find out more about the Kellogg Programme please follow the link (<http://www.kellogg.org.nz/>).

The survey data will be utilised to find common themes or major differences in answers, the answers will be anonymous in nature and will not be attributed to a single respondent. You may however choose to be identified should the greater industry wish to utilise the information however this will not form part of the report or survey results.

Description of yourself/business:

1. If you would like to be identified as part of this survey and your results shared please leave your name and contact details (I wish to remain anonymous, I am happy to be associated with my answers, I wish to be contacted regarding the survey)
2. How would you describe your association with the NZ Wagyu Industry? (Current Wagyu farmer/breeder, current livestock farmer, ex farmer, rural professional, other (please advise))
3. Do you have a financial interest in Wagyu cattle in any capacity?
4. Is farming Wagyu a hobby or a financially motivated business decision?
5. If you are a farmer is farming your sole income stream?
6. Do you farm Wagyu cattle? (N/A, Yes, No, Yes along with other livestock)
7. What percentage of your income is derived from Wagyu? (100%, 75-100%, 25-75%, 0-25%)
8. Do you have a farming related degree or higher education?
9. How long have you been involved in the NZ Wagyu industry? (<1yr, 1-5yrs, 5-10yrs, >10yrs/I was here from the start)
10. How would you rate your knowledge of the NZ Wagyu industry on a scale of 1 – 10? (1 being very knowledgeable)

The NZ Wagyu Industry Focus

11. Do you think there is a role for government to help the industry get on its feet?
12. Do you think the industry is currently on the path to success? (1 being strongly agree)
13. Please answer the following questions about how important the following are to the NZ Wagyu industry to achieve success? (1 being the most important)
 - a. The industry should be focusing on a grass-fed product (vs grain-fed)

- b. The industry should be focusing on a Full blood product (vs Purebred vs F1 or better)
 - c. The industry should be focusing on an organic product (vs conventional)
 - d. The industry should be focusing on a sustainable product
14. Do you think the industry needs to come together and have scale for success?
 15. Are we able to be successful in different ways with differentiated products and marketing (vs conventional commodity product)
 16. Do you think the NZ Wagyu industry needs to embrace modern artificial breeding and genetic selection techniques more?
 17. If you answered yes to above do you think we currently have the capacity and access to do so?

The future/markets

18. In your opinion where/what are the biggest gains to be made in order to have a successful industry?
19. What would be your biggest concern in the industry that needs to be addressed in order to be more successful?
20. What do you think are the biggest threats to the industry?
21. What do you think are the biggest opportunities for the industry?
22. What do you think are the biggest weaknesses in the industry?
23. What do you think are the biggest strengths to build on in the industry?

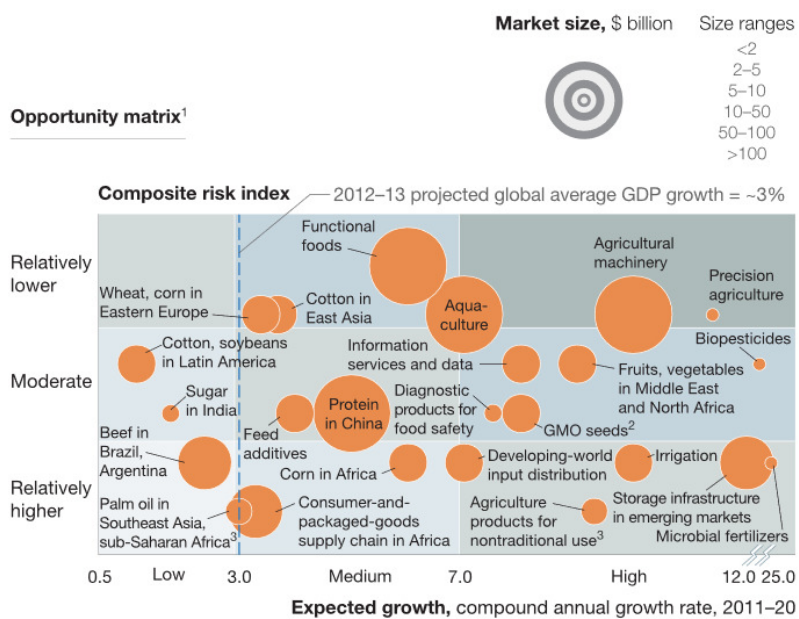
More, Better, Different, Less

24. In order to have a successful industry what should we do for the following: More, Better Different, Less
25. If you were to start again farming Wagyu, what might you do differently?
26. Do you think there is anything that should have been asked in this survey and if so what?

Appendix 2 – Outcome logic model for Marbled Grass-fed Beef PGP



Appendix 3 - Opportunities for Investment in the Agri-food sector



Appendix 4 – Beef + Lamb NZ Programmes of Activity; Integrated Programme Visual

