



MINISTRY OF AGRICULTURE AND FORESTRY

MEAT: THE FUTURE

OPPORTUNITIES AND CHALLENGES FOR THE NEW ZEALAND
SHEEP MEAT AND BEEF SECTOR OVER THE NEXT 10 TO 15 YEARS

2009



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A large number of industry experts were either interviewed or surveyed as part of the study. MAF greatly appreciates their input and acknowledges their openness and generosity of time.

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Some photos have been provided courtesy of Meat & Wool New Zealand.

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FOREWORD

MINISTRY OF AGRICULTURE AND FORESTRY

The meat industry is of utmost importance to New Zealand's economy, and it has been since the S.S. *Dunedin* first set sail from Port Chalmers to London over 125 years ago. In 2007/08, the sector generated \$4.6 billion in export earnings, comprising 15 percent of total merchandise export value. We think the meat industry has great potential to grow and thrive over the next 10 to 15 years, but there are risks and challenges that need to be overcome.

Over the last decade or so there have been many studies of the meat sector that have examined the industry's frustrations and aspirations. A large number have agreed on a diagnosis of its problems, and suggested a plan of action for the way ahead.

This study does not present a plan of action. We believe that farmers and industry, not government, are best placed to make commercial decisions about their future.

Rather, this study provides the basis to understand the challenges the sector faces, with the aim of encouraging debate and conversations about the future beyond next season. We have asked experts in one or many aspects of the meat industry – farmers, processors, marketers and international clients, and even the odd government adviser – how they saw the industry 10 to 15 years from now. And we asked them how that contrasted with what they wanted to see happen, and why.

We have excluded many climate change issues from the paper, due to uncertainty over the international community's response to agricultural emissions and therefore what impact this may have on New Zealand's sheep and beef sector. Instead, we have concentrated on other challenges and opportunities that may face the sector over the coming decade or so, such as profitability, investment and a focus on the market.

The bulk of the research underpinning this report was completed prior to 2008's financial crisis and subsequent economic downturn. Despite a somewhat changing economic landscape, this report looks ahead 10 to 15 years, which means its findings are still relevant today.

This paper distils the results from a survey of experts, as well as some perspectives from the Ministry of Agriculture and Forestry (MAF) on the key issues and global trends facing the industry. We also looked at the data about company performance, at history and at some examples from other countries. We are grateful to everyone who responded to the survey.

Pulling together that information and analysis, we present four scenarios for the future of the meat sector in the next 10 to 15 years. Scenarios are not predictions. Each chooses some key factors and extrapolates from the feedback of our survey respondents, and other data, to ask “what if”.

While these are not predictions, they are in part sobering reading. Despite overall optimism, there are clearly great challenges as well as great opportunities ahead for the meat sector. Here at MAF, we look forward to debating the contents of this paper with the industry, and to identifying areas where there is an opportunity to make a change for good.



Paul Stocks
Deputy Director-General
MAF Policy



FOREWORD

MEAT INDUSTRY ASSOCIATION

In the following study, MAF have set out to “help the [meat] sector to think about the future” by “identifying medium-term strategic opportunities and challenges”. To do so, they have drawn upon the views of key people throughout the industry, and as a result, few of the ideas expressed here will come as a surprise to those involved with the sector.

The Meat Industry Association (MIA) and its members’ role in this report has been limited to participating in the Delphi study interviews. Bringing together key players’ views of “strategic opportunities and challenges” and, through the Delphi technique, ranking them in priority, provides some useful new insight.

The study correctly highlights profitability, and investment in innovation, marketing and supply chains as being key areas for consideration by the sector. While “profitability” is the key issue, it is also a difficult concept to analyse or even describe in a sector where farmers tend to capitalise wealth gains in land value and where cooperative shareholders can in theory trade-off the returns they receive on their farming assets against those they receive on their processing assets.

Profitability is also tightly interrelated with questions of investment, where owners need to balance demands for short-term cash-flow from the industry against investment for long-term yield. We would note that unlike some other primary sector industries, the meat industry has a strong exposure to open markets for capital and therefore, that the level of investment in innovation or markets for instance reflects, to some extent, the equity markets’ appetite for such investment.

MIA would support MAF’s suggestion that the sector also needs to give consideration to maintaining access to key assets that may be underappreciated by some. The sector’s ability to leverage plentiful skilled labour and water, a “clean, green image”, a non-prohibitive regulatory environment and a strong disease-free status are things we should not take for granted, but in which we must continue to invest.

The MIA does have some difficulty with considering this study in the context of the suggestion that the meat sector is broken or “systematically underperforming”. The sector provides a textbook model of a free, competitive market and displays all the ingenuity and efficiencies that accompany such markets. The diversity amongst the industry’s processing and marketing arms, which involve a mixture of public and private companies and farmer cooperatives, enables the industry to capture and utilise the strengths of each of these models. While we undoubtedly have a major challenge in the form of land use change, which stems particularly from the relative returns available from meat and dairy, it is not logical, or fair, to infer that our sector’s people or culture or structure have created that relativity of returns.

Another important point to remember is that, historically, the profitability of sheep farming has been determined by the returns available from several product streams, most importantly meat and wool. In general, today, wool's contribution to farmers' profitability has disappeared, leaving meat to provide the vast majority of revenues. From this perspective, it is completely inappropriate to attribute farmer profitability complaints solely to the performance of the meat value chain.

For all our best efforts, agriculture (with plenty of good company) remains a business where supply, demand and profitability change over time in cycles. The relative profitability of meat, wool, dairy, horticulture and other New Zealand land outputs has changed in the past and it will change again in the future.

Many of the drivers of relative profitability, like world prices, subsidisation and protectionism, are outside New Zealand's control, but that does not mean our sector should not constantly strive to make strategic improvements to its competitiveness. There are hurdles and boosts to making such strategic improvements at both ends of the economic cycle.

This study provides some suggestions on how the sector could make strategic improvements. Giving these suggestions our honest consideration costs little. If the ideas contained here promote some new and constructive discussion and debate within the sector, then the study will have served a valuable purpose.

Tim Ritchie
Chief Executive Officer
Meat Industry Association



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EXECUTIVE SUMMARY

New Zealand's sheep meat and beef sector has been suffering from a period of low profitability. This has been exacerbated by a nationwide drought, fluctuating commodity prices and, until recently, a strong New Zealand dollar. Many people also believe that the industry has been systemically underperforming.

This report takes a strategic view of the sheep meat and beef sector. It looks out over the next 10 to 15 years to identify and synthesise some of the main strategic opportunities and challenges facing the sector.

A Delphi survey of experts was conducted to draw on the sector's collective knowledge and expertise. Respondents included farmers, processors, stakeholder groups, researchers, observers, government, and international contacts and customers. The Delphi method involves two rounds of anonymous survey questions. It sets out to reveal what experts think, without them being influenced by the identity of others answering. The study does not seek to gain a statistically robust representative view of the sector as a whole, but rather to look for consensus and disagreement in respondents' informed opinions.

STRATEGICALLY IMPORTANT FACTORS

The table below outlines respondents' top 10 factors of strategic importance.

TOP 10 FACTORS OF STRATEGIC IMPORTANCE IDENTIFIED IN DELPHI SURVEY

FACTORS OF STRATEGIC IMPORTANCE	RANK
Sheep and beef farm overall profitability	1
Investment in sector research and development	2
Meat processing companies' overall profitability	3=
The importance to sales from using "New Zealand" in branding	3=
Reliance on generating and growing new markets to sustain the meat sector	5=
New Zealand ownership and control of sheep meat distribution and marketing networks and firms	5=
Level of co-operation between NZ companies to develop and sustain marketing internationally	7
The reliance on producer and processor efficiency to sustain the meat sector	8
Use of forward supply contracts for supplying livestock to processors	9
Marketing expenditure as a proportion of total expenditure by the sheep and beef sector	10

We take a strategic view of the sheep meat and beef sector out over the next 10 to 15 years.

...an economically and environmentally sustainable industry that invests in innovation, has a greater focus on the market and is more co-ordinated across the value chain.

PROFITABILITY AND INVESTMENT

These factors reflect a mixture of investment priorities – research and development and growing new markets – and structural issues, including ownership of distribution networks and international marketing co-operation. Overall profitability, both on-farm and at the processor level, is clearly identified as important, yet profitability is both a cause and effect of other actions. The industry might wait for higher profits before being able to invest in a step-change in innovation investment. In the case of co-operatives, farmers might forgo a greater proportion of short-term returns (payouts for livestock) in favour of allowing their co-operatives to retain more profits to reinvest in their future.

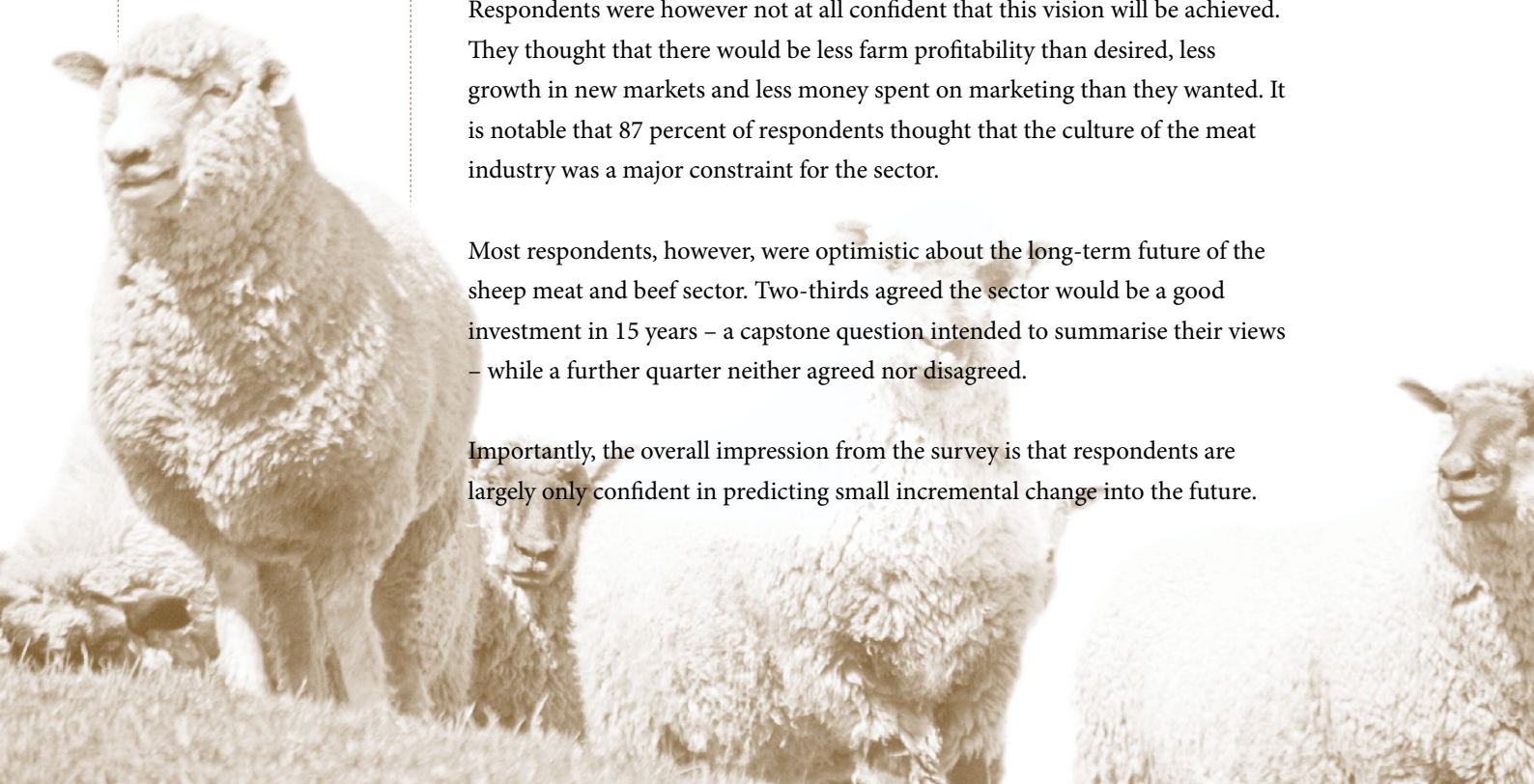
The reliance on producer and processor efficiency to sustain the meat sector was ranked as the eighth most important strategic factor. While productivity improvements will be important to remain competitive, the sector's future clearly lies in creating more value in its products, rather than competing on price and cost reduction alone. An interesting omission from the list of top strategic factors was security of inputs (that is, natural resources such as water, and human capability), which has been identified in other forums.

VISION BUT A LACK OF CONFIDENCE IN ACHIEVING IT

Respondents had a vision for the sector in 10 to 15 years; an economically and environmentally sustainable industry that invests in innovation, has a greater focus on the market and is more co-ordinated across the value chain. Respondents were however not at all confident that this vision will be achieved. They thought that there would be less farm profitability than desired, less growth in new markets and less money spent on marketing than they wanted. It is notable that 87 percent of respondents thought that the culture of the meat industry was a major constraint for the sector.

Most respondents, however, were optimistic about the long-term future of the sheep meat and beef sector. Two-thirds agreed the sector would be a good investment in 15 years – a capstone question intended to summarise their views – while a further quarter neither agreed nor disagreed.

Importantly, the overall impression from the survey is that respondents are largely only confident in predicting small incremental change into the future.



This does not rule out the possibility of more radical changes to the sector, but most respondents considered change of this nature as less likely. Most experts in the industry expect that the status quo will only change to a small extent in the future. This is not encouraging to those who believe that the status quo is not sustainable.

CONSTRAINTS AND BENEFITS OF THE CURRENT SYSTEM

The results from the Delphi survey indicate what the sector thinks the future of the industry may look like in 10 to 15 years. We should also look at the current system and some of its inherent constraints and benefits. Some of the key characteristics of the current system are summarised below:

- › **THE MARKET AND TRADE ENVIRONMENT:** The sheep meat and beef sector relies heavily on a small number of traditional markets, although there has been recent growth into new markets (in particular Asia). The sector faces a variety of international competitors, and competes against a number of other protein sources. If the relative cost of producing meat in New Zealand continues to increase due to, for example, higher future land prices, then the sector may need to find ways of embedding more value in the products it produces.
- › **THE PROCESSING SECTOR:** The sector faces certain capital constraints that limit its ability to invest in areas such as innovation. In particular, farmers lack incentives to invest in their co-operatives, since their shares do not increase in value with the performance of the co-op. This differs from normal company shares or other co-operative shares whose value can increase. Consequently, co-operatives may be unable to reinvest at the desired rate.

Structural overcapacity in the meat processing industry also leads to sub-normal profits for meat processing firms, limiting their ability to invest in the future. The dynamics of seasonality and seasonal (as opposed to structural) overcapacity, as well as the allocation of quota, can contribute to spot market relationships between farmers and processors, and production-driven business models. Both of these factors detract from the sector's ability to implement medium-term value-enhancing strategies.

- › **THE PASTORAL AGRI-SYSTEM:** Competing land uses and relative industry returns have recently led to a large number of conversions from sheep and beef to dairy or dairy support. The sheep and beef industry now depends more on extensive hill country than in the past, and this may increase the risk to the sector due to reduced access to lower-risk finishing land. Sheep and beef farming could also feel the squeeze on the more marginal extensive hill country if forestry's future returns improve. Land is not the only constraint. The cost and security of access to inputs such as water and fertiliser, as well as the quantity and quality of human capability in the sector, are likely to become more important issues in the future, although this is not highlighted by the Delphi survey results.

Much of the sector is characterised by spot market relationships between farmers



Photo: Meat & Wool New Zealand.

Opportunities appear to exist for the sector to become more aligned and better connected across the value chain.

and their processors. Farmers may find it hard to credibly commit a large proportion of their production to longer-term contracts due to the constraints of producing meat in a biophysical environment (for example, the variable impacts of weather, animal health). This predisposition to spot markets may become exaggerated by the increased risk from more adverse climatic events and an industry depending more on extensive hill country.

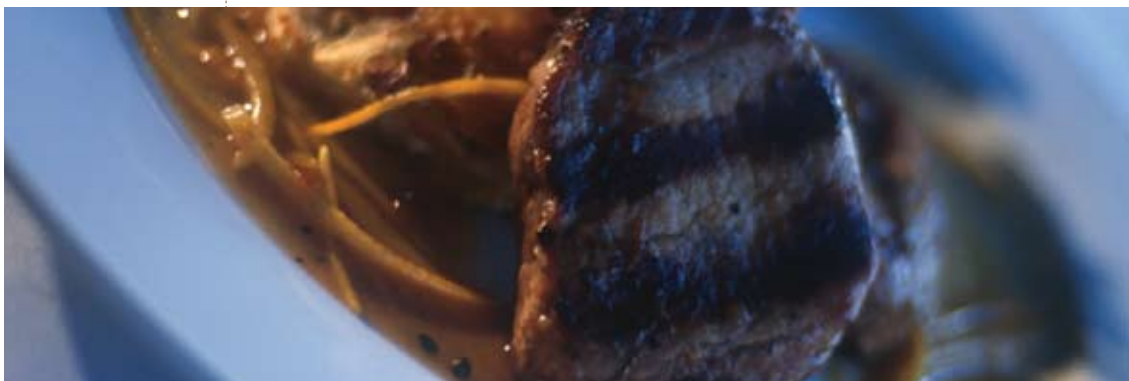
- › **THE INTERRELATIONS ACROSS THE MEAT SECTOR'S VALUE CHAIN:** Clear conflicts currently face individual sector participants as well as different points across the value chain. For instance, processors benefit from long-term supply commitments from farmers, which ensure certainty of supply. At the same time processors face short-term financial incentives to procure on the spot market to both maximise capital utilisation and gain maximum access to quota markets. Processors may also value farmers smoothing their supply curves in order to reduce seasonal spikes.

Opportunities appear to exist for the sector to become more aligned and better connected across the value chain, and to create greater value and higher returns to the sector.

MEGA-TRENDS

Several forecasting and foresight initiatives have been undertaken recently to identify large-scale drivers for change. These mega-trends are likely to have wide-ranging and pervasive effects on society. From these studies and associated literature, this report identifies five mega-trends that are directly relevant to the agricultural sector:

- › **CHANGING DEMOGRAPHICS AND WEALTH:** The world is continuing to experience a substantial change in both demographics and wealth. As the changes become more pervasive, we can expect to see changes throughout the meat value chain, both in determining future markets and in the resulting impacts on meat processing and on-farm production.



The opportunities identified describe a vibrant sector that places New Zealand at the forefront of high-quality, sustainably produced meat and rewards farmers for meeting consumer expectations in both traditional and new markets.

- › **FOOD, IMAGE AND BELIEFS:** Food consumption is changing for a number of reasons. Wealthy consumers are increasingly demanding products (including food) that help define their image and that connect with their core beliefs. This presents opportunities in terms of specialised and diversified products, but also presents challenges from an increasingly diverse marketplace.
- › **GLOBALISATION:** Despite recent concerns about the impacts and adverse consequences of globalisation, the international trading environment and increasing global competition is likely to be a trend that will dominate over the next 10 to 15 years. The two main sources of emerging international competitors are (i) low-cost countries and (ii) local and regional producers in the market.
- › **CLIMATE CHANGE:** Climate change is a driver for change in production and is shaping market expectations. Although climate change is a global phenomenon, impacts and likely mitigation measures vary regionally. The increased frequency of extreme weather events may well limit agricultural production and farmers' ability to plan and commit to longer-term supply.
- › **THE INCREASED PRESSURE ON THE NATURAL RESOURCE BASE:** New Zealand's pastoral agri-system operates within the constraints of a biophysical environment. Therefore, expansion and intensification of farming can put pressure on the natural resource base. Meanwhile, society increasingly expects the agricultural sector to perform better environmentally.

SCENARIOS FOR THE FUTURE

Scenarios are not predictions; they are designed to encourage debate and inform decision-making by highlighting future strategic issues and challenges facing the sector. There are, of course, a multitude of other possible scenarios. This report concentrates on just four, which were chosen on the basis of factors identified in the Delphi survey as important strategic issues with uncertain future outcomes.

The first scenario paints a bleak future for the sector: it describes a situation where current negative trends are extrapolated into the future and where the sector fails to adapt to changing circumstances. The sector, of course, has great scope to adapt to meet future opportunities and challenges. The remaining three scenarios describe potential futures where the sector has, to varying degrees, managed to capitalise on different opportunities and has met certain challenges.

The four scenarios are summarised as follows:

- › **SLIPPERY SLOPE:** Failure to address key opportunities and challenges leads to a substantial reduction in the sector's size and scope. Profits not only retain their cyclical variations, but become systemically lower.
- › **A NEW MARKET ORIENTATION:** The sector is able to diversify into new markets and overcome

Leadership, vision and action are required from the sector to ensure this comparative advantage delivers a successful and sustainable industry into the future.

the production challenges of greater year-round supply and product specification. Improved economies of scale lead to successful processor consolidation.

- › **SHRINK-TO-FIT:** The sector reduces in size, but is able to stabilise due to increased returns from reduced supply. Competitive advantages are achieved in areas such as environmental performance and the sector is able to meet exacting consumer requirements in traditional markets.
- › **THE KNOWLEDGE INDUSTRY:** The sector makes a step-change in innovation investment, allowing for greater product and process innovation. Strategic alliances are increasingly entered into with customers, allowing greater transmission of customer requirements through the value chain. Increased capabilities and intellectual property from research and development allows for the internationalisation of the meat sector and associated industries.

ONE EYE TRAINED TO THE FUTURE

While the sector is rightly focused on the current issues that it faces, it is equally important to have one eye trained to the future. The purpose of this study is primarily to try and facilitate this by identifying and synthesising medium-term strategic opportunities and challenges facing the New Zealand sheep meat and beef sector. These opportunities and challenges are not definitive; they are a base for debate and discussion.

Collectively, the opportunities identified describe a vibrant sector that places New Zealand at the forefront of high-quality, sustainably produced meat and rewards farmers for meeting consumer expectations in both traditional and new markets. The report also identifies a set of challenges that, if met, will strengthen the industry's position globally, but if not acted on might well perpetuate a lack of profitability across the sector.

Despite the obvious challenges that the sector faces over the next 10 to 15 years, this study has identified a general positive slant to people's perception of the industry's future. Clearly, though, this rosy outlook will not be achieved through inaction or simply "carrying on as normal". New Zealand has, and should be able to maintain, a comparative advantage across much of the value chain. Leadership, vision and action are required from the sector to ensure this comparative advantage delivers a successful and sustainable industry into the future.

1 INTRODUCTION

New Zealand's sheep meat and beef sector has been suffering from a period of low profitability. This has been exacerbated by a nationwide drought, fluctuating commodity prices and, until recently, a strong New Zealand dollar. Many people also believe that the industry has been systemically underperforming.

The meat industry's performance is of national significance: in 2007/08, it generated \$4.6 billion in export earnings, comprising 15 percent of total merchandise export value. Meat processing by-products added another \$1 billion. Meat processing was estimated to contribute 1.6 percent of total gross domestic product (GDP). This compares with 1.8 percent for livestock and cropping farming in 2003/04.

Despite apparent recent underperformance, the sector is generally seen to have a positive future. Trends of growing wealth (despite the current global economic downturn) and urbanisation in developing countries augur well for future demand. Consumers are becoming more sophisticated and demanding more of products. The capabilities that have been built up over the New Zealand sheep meat and beef sector's long history position us well to take advantage of these and other opportunities. However, the sector needs to overcome numerous challenges to fully capitalise on these opportunities.

Specifically these challenges revolve around the production of a consistent high-quality product within the constraints of a biophysical environment¹. Not the least of these challenges is climate and weather variability and how this impacts on seasonality of production, feed risk and farmers' ability to plan ahead and credibly commit to longer-term supply contracts.

The paper takes a strategic view of the sector, looking out 10 to 15 years to identify future opportunities and challenges facing the sector. It draws on a number of working documents commissioned by the Ministry of Agriculture and Forestry (MAF) for this study².

Section 2 summarises the results from a Delphi survey undertaken on the sheep and beef sector, which asked for respondents' opinions on identified strategic factors. Section 3 discusses the current sheep meat and beef agri-system, and identifies some of the system's key benefits and challenges. In light of the Delphi survey results and the challenges facing the current system, section 4 draws on extensive literature to identify some key mega-trends facing the sector and the likely implications of these trends.

The meat industry's performance is of national significance: in 2007/08, it generated \$4.6 billion in export earnings ... The sector is generally seen to have a positive future.

¹ The biophysical environment is the symbiosis between the physical environment and the biological life forms within the environment, and includes all variables that comprise the Earth's biosphere. [http://en.wikipedia.org/wiki/Environment_\(biophysical\)](http://en.wikipedia.org/wiki/Environment_(biophysical))

² MAF does not currently intend to publish these documents, although it may make the following documents available on request:
• AgResearch (2008) *Meat Sector Literature Review* • *Sheep meat and beef sector study: Delphi survey results* (2008).

Section 5 puts forward four potential scenarios that the sector may face in 10 to 15 years. Scenarios are not predictions; they are designed to encourage debate and inform decision-making by highlighting future strategic issues and challenges facing the sector. There are, of course, a multitude of other possible scenarios. This report concentrates on just four, which were chosen on the basis of factors identified in the Delphi survey as important strategic issues with uncertain future outcomes. Each of these factors presents its own opportunities and challenges for the sector.

This report concludes by briefly summarising the strategic opportunities and challenges identified by this study and some observations of issues that may be facing the sector 10 to 15 years from now.



2 DELPHI SURVEY OF SHEEP MEAT AND BEEF SECTOR

In 2008, MAF completed a Delphi survey of New Zealand's sheep meat and beef sector. This study would not have been possible without contributions from across the sector and MAF is grateful to all those who participated.

The Delphi method was chosen as a means for drawing on the sector's collective knowledge and expertise. Respondents included farmers, processors, stakeholder groups, researchers, observers, government, and international contacts and customers. This method was seen as a way of looking beyond the immediate circumstances of the industry to identify medium and long-term views of the sector. Appendix A contains further details on the Delphi method.

The intention of the study was not to gain a statistically robust representative view of the meat sector as a whole, but rather an overview of respondents' informed opinions. Although the Delphi survey sought to look 10 to 15 years ahead, the results of this study, like any opinion-based study, are inextricably linked to perception of the present time and current sector conditions. This is something to be aware of when interpreting the results.

STRATEGICALLY IMPORTANT FACTORS

The study asked people what factors were most important for the sector in the next 10 to 15 years. It then asked (a) what change they desired in that factor and (b) what change they expected to see in that factor. Finally, they were asked how confident they felt that the expected change would in fact occur.



TABLE 2.1: TOP 10 FACTORS OF STRATEGIC IMPORTANCE IDENTIFIED IN DELPHI SURVEY¹

FACTORS OF STRATEGIC IMPORTANCE	RANK
Sheep and beef farm overall profitability	1
Investment in sector research and development	2
Meat processing companies' overall profitability	3=
The importance to sales from using "New Zealand" in branding	3=
Reliance on generating and growing new markets to sustain the meat sector	5=
New Zealand ownership and control of sheep meat distribution and marketing networks and firms	5=
Level of co-operation between NZ companies to develop and sustain marketing internationally	7
The reliance on producer and processor efficiency to sustain the meat sector	8
Use of forward supply contracts for supplying livestock to processors	9
Marketing expenditure as a proportion of total expenditure by the sheep and beef sector	10

Note

¹ The rankings were established after the second survey asked respondents to reassess their answers after seeing the results of the first survey.



IMPORTANCE

The Delphi survey identified the top 10 most important factors for the industry over the next 10 to 15 years by averaging responses to the first survey, then feeding these averages back to respondents in the second survey and asking for confirmation of their rankings. As a result of this process some overall rankings changed between survey one and two. The top 10 most important factors are listed in Table 2.1 and discussed in more detail later in this section and in Appendix B.

Respondents identified both overall farm and processor profitability, investment in research and development, and the use of “New Zealand” in branding as the factors of most strategic importance to the sector. While all of the factors are to some degree linked, future farm and processor profitability are intrinsically caused by changes in other factors and also impact to varying degrees on these other factors.

DESIRABILITY AND CONFIDENCE

In the first survey, respondents were asked to identify their *desired* future changes in these factors, that is, what they would like to see happen. Respondents were also asked to identify the change that they *expected* to see happen, that is, what is most likely. A measure was then made of the *difference*

TABLE 2.2: THE GOOD NEWS: DESIRED CHANGE = EXPECTED CHANGE¹

CONFIDENT	LESS CONFIDENT
Increased prevalence of forward supply contracts	No discernable change to average size of processing plants
Increased use of “New Zealand” in branding	Reduced use of brokers and agents to market meat industry products
Increased reliance on producer and processor efficiency	A decreased proportion of beef that is sold in North America as manufacturing beef
Improved labour efficiency	Reduced proportion of total New Zealand sheep meat that is sold in Europe
Increased size of sheep and beef farms	A small increase in the proportion of processing capacity owned by co-operative companies
Increased price of sheep and beef farm land over the next 10 to 15 years	Increased New Zealand investment in offshore sheep farming
Improved environmental performance on sheep and beef farms	

Note

¹ The items in bold were among the top 10 strategic factors identified in the survey.

between desired and expected change. Respondents were also asked how *confident*³ they were that the expected changes would occur.

Table 2.2 summarises factors where expected change equals respondents' desired change, that is, what they think will happen is the same as what they want to happen.

Respondents had high confidence in some of their answers – these changes can be seen as largely predictable. Respondents had less confidence in other answers – while these factors could reasonably be ignored in any high-level analysis, they could have wildcard implications so should not be completely discarded.

Table 2.3 summarises factors where expected change differs substantially from respondents' desired change, that is, what they think will happen is different from what they want to happen. As above, respondents had high confidence in some of their answers and less confidence in others.

CONCLUSIONS ON STRATEGICALLY IMPORTANT FACTORS

Action is needed to address factors where the expected change differs substantially from respondents' desired change. This is because there is a large *difference* between what respondents want to happen and what they think is likely to happen. Factors with a large

TABLE 2.3: THE BAD NEWS: DESIRED CHANGE ≠ EXPECTED CHANGE¹

CONFIDENT	LESS CONFIDENT
A less-than-desired increase in sheep and beef farm profitability	A less-than-desired increase in research and development investment
A less-than-desired increase in reliance on growing new markets	A less-than-desired increase in processing companies' profitability
Reduction in size of national sheep flock more than desirable	A less-than-desired increase in co-operation between New Zealand meat companies in international marketing
A less-than-desired increase in processing plant modernisation investment	A less-than-desired increase in marketing expenditure as a proportion of total expenditure
A less-than-desired increase in processors' profits generated by further processed products	A less-than-desired increase in New Zealand ownership and control of distribution and marketing networks
	Increase in the proportion of farm debt to equity although respondents wanted a decrease
	Decrease in the importance of wool to net farm profit although respondents wanted an increase
	A less-than-desired increase in the proportion of beef sold to countries outside North America

Note

¹ The items in bold were among the top 10 strategic factors identified in the survey.

³ Low confidence may be expressed for a variety of reasons. Some factors are genuinely more difficult to predict than others. Respondents' confidence is also likely to be affected by their level of knowledge in particular areas. For example, those involved at the marketing end of the supply chain may have less knowledge of the on-farm factors, and therefore be less confident in these answers.

difference (that is, those in Table 2.3 that are in bold are also one of the top 10 most important factors) have particularly high strategic significance. These factors, and what different changes in them may look like, are used later in this report to differentiate between four future scenarios.

ADDITIONAL FACTORS

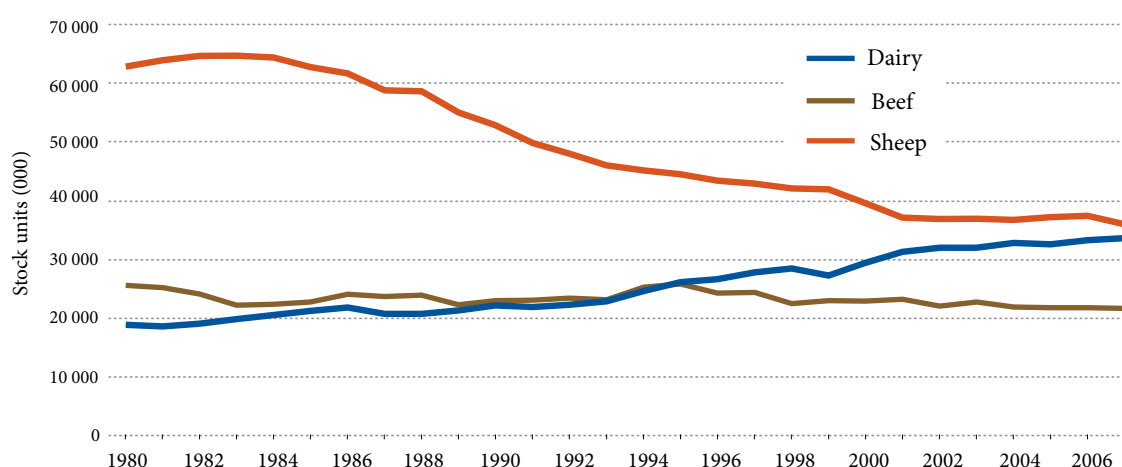
Some of the other factors identified as important, although not in the top 10, are discussed below.

SIZE OF SHEEP AND BEEF SECTOR

The land area under sheep and beef farming has recently reduced as a result of conversion to other land uses. National sheep and beef farm land area dropped 2 percent between 2002 and 2006 – from a total of 5.87 million hectares to 5.75 million hectares. Looking out over the next 10 to 15 years, 84 percent of respondents considered that a loss of at least 5 to 10 percent of farm land is likely and 45 percent of respondents considered that the loss of sheep and beef farm area will be at least 10 to 15 percent of existing land.

Figure 2.1 shows the change in New Zealand's actual livestock numbers over the last 25 years.

FIGURE 2.1: STOCK UNIT¹ TRENDS OVER TIME



Source: MAF.

Note

¹ A useful, although somewhat imprecise, way of combining different species and classes of livestock is to calculate stock units. The stock unit coefficients reflect live weights and production of the mid-1960s. Since then live weights and production outputs per breeding animal have increased and, while relativity between coefficients might be reasonably indicative today, their absolute level is understated. One stock unit may be about 1.3 today. Livestock numbers measured are numbers of breeding animals.

The Delphi survey responses indicate that sheep numbers may decline more than the total land area under sheep and beef farming.

Respondents considered that this downward trend in sheep numbers will largely continue, albeit at a slower rate. Responding to a question on likely national sheep numbers, 71 percent of respondents expected sheep numbers will decrease by at least 10 to 20 percent – down to between 30 and 34 million sheep – while 96 percent predicted a decrease of up to 10 percent⁴.

The Delphi survey responses indicate that sheep numbers may decline more than the total land area under sheep and beef farming. This could be due to one or more of the following reasons:

- › continued productivity improvements allowing the sector to carry reduced numbers of breeding animals;
- › a greater proportion of the industry becoming extensive⁵ sheep and beef farms – this is consistent with the loss of intensive finishing farm land to other land-uses;
- › individual farms becoming more extensive – a potential lower stocking rate may be a response to increased feed risk from extreme climatic conditions and/or the need for a reduced environmental impact;
- › the ratio of sheep to beef on mixed livestock farms changing in favour of beef.

Respondents considered that total beef numbers would be much more stable:

- › Half expected the national beef herd to be within 5 percent of present.
- › Most of the remainder expected an increase or decrease within 5 to 10 percent.

While the 2007 national beef herd consists of 4.4 million animals, the total dairy herd accounts for another 5.1 million animals. The dairy sector contributes substantially to the beef sector directly or indirectly through the supply of cull cows and bobby calves. Over half (59 percent) of respondents expect beef production sourced from the dairy sector to grow from 65 percent in 2007 to between 70 and 80 percent of total beef over the next 10 to 15 years.



⁴ The national sheep flock was estimated to be 38 million at the time of the survey.

⁵ Extensive farming (as opposed to intensive farming) is a low-input system of farming that is conducted on vast areas of land with relatively low productivity.

Environmental management controls were identified as an important challenge and opportunity for the sector.

TABLE 2.4: ENVIRONMENTAL COMPETITIVE ADVANTAGE

WILL ON-FARM ENVIRONMENTAL PERFORMANCE BE A COMPETITIVE ADVANTAGE FOR NEW ZEALAND IN 10 TO 15 YEARS?	PERCENTAGE OF RESPONDENTS
Yes – across all markets	69
Yes – in Europe only	12
Yes – in some other markets only	12
No – not in any markets	7

Source: MAF.

FARM ENVIRONMENTAL PERFORMANCE

Environmental management controls, either through regulation or to meet market requirements, were identified as an important challenge and opportunity for the sector. When asked whether on-farm environmental performance would improve over the next 10 to 15 years, 91 percent of respondents thought that it would. Respondents clearly considered that this improved on-farm environmental performance will be a competitive advantage for New Zealand producers, as shown in Table 2.4. Improved environmental performance is also likely to be necessary due to increasing pressure on New Zealand's natural resource base and New Zealand society increasingly expecting that agriculture will reduce its impact on the environment.

Respondents generally expected that the future sector will see more environmental controls than at present. Figure 2.2 summarises respondents' expectations for environmental controls on certain aspects of the meat industry in 10 to 15 years (answers were able to vary between voluntary and mandatory requirements). Areas that are expected to see a substantial amount of future mandatory controls include:

- › stricter controls on processing plant discharges of water;
- › limits on stream and ground water abstraction;
- › on-farm animal welfare management plans;
- › on-farm nutrient budgeting.

FURTHER FINDINGS FROM THE DELPHI SURVEY

Respondents were also asked a variety of other questions. A number of interesting findings are summarised below. Appendix B contains further discussion.

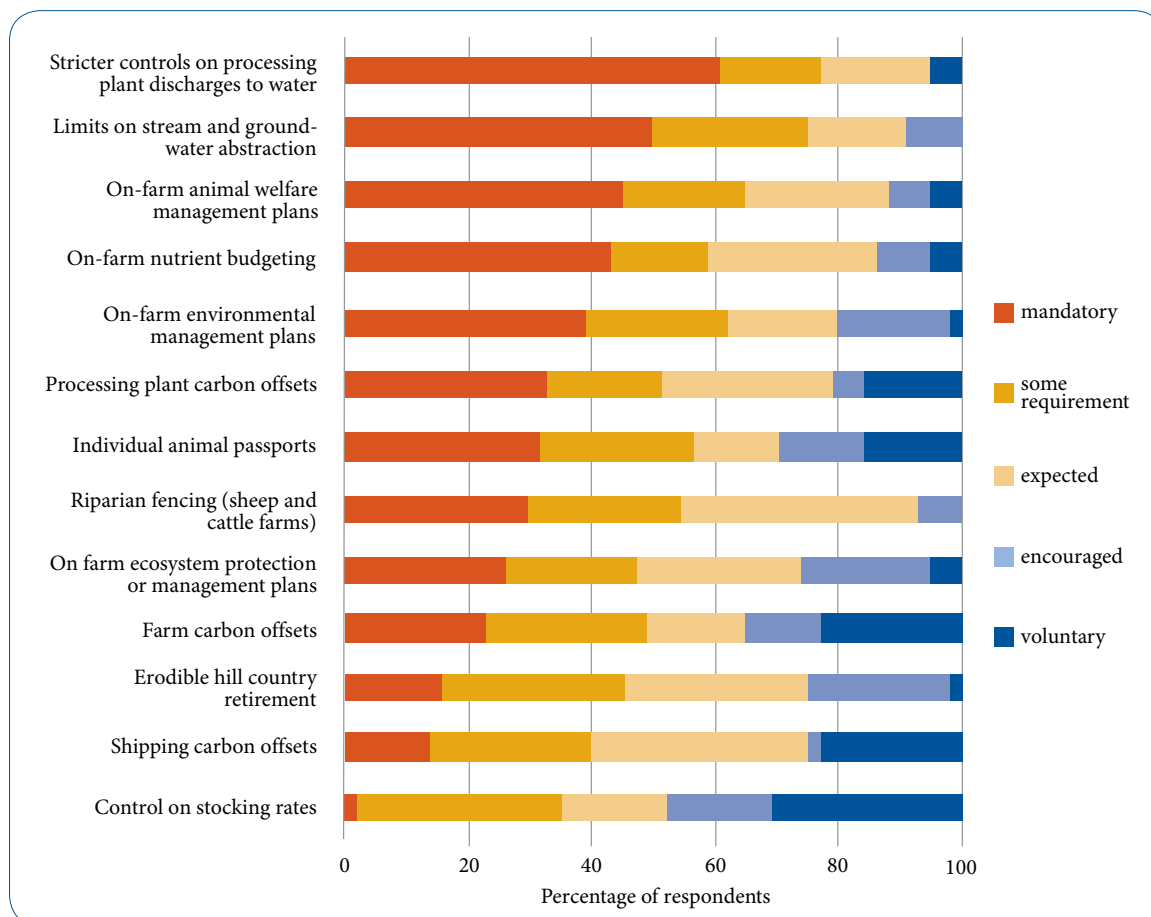
DRIVERS OF PROFITABILITY

Respondents were asked to identify the most important drivers for improved on-farm and processor-level profitability.

The three most important drivers for on-farm profitability were identified as follows:

- › **HIGHER GLOBAL MEAT PRICES:** Largely an external driver – a function of global demand and supply. Respondents were concerned about the sector's exposure to international prices and competitors.
- › **HIGHER PRICES PAID FOR NEW ZEALAND MEAT COMPARED WITH INTERNATIONAL COMPETITORS:** This implies that New Zealand meat will be embedded with extra value compared with products from international competitors. This may be due to New Zealand's food safety and disease-free reputation, product branding or more sophisticated verifiable attributes in areas such as environmental and social sustainability.
- › **IMPROVEMENTS IN ON-FARM EFFICIENCY:** The meat sector will continue to strive for improvements in productivity.

FIGURE 2.2: ENVIRONMENTAL CONTROLS ON THE SECTOR





The two most important drivers for processor-level profitability were identified as follows:

- › **CO-ORDINATION/CO-OPERATION THROUGHOUT THE VALUE CHAIN:** This is likely to include both horizontal and vertical co-ordination. Horizontal co-ordination may include a higher level of co-operation between New Zealand companies to develop and sustain marketing internationally. Vertical co-ordination may include greater use of strategic relationships and a move away from the spot market⁶. Respondents clearly identified that unattractive contract prices were the main barrier to farmer uptake of procurement contracts, and that farmer preference for spot markets was the second most important factor.
- › **INDUSTRY RATIONALISATION AND/OR CONSOLIDATION:** Changes to industry structure may be required if the size of the sector reduces. Alternatively, certain commercial strategies will probably lend themselves to changes in industry structure.

Also identified as important for processor profit, but to a lesser degree, was investment in developing new markets and/or products. While investment in developing new markets was seen as important for the fortunes of the industry, investing in developing traditional markets was not considered as being a major driver for profitability.

EXPECTED FUTURE MARKET SHARE

Respondents' expectations of future export markets identify a potential increase in the proportion of sheep meat going to the Middle East/North Africa and to China (and potentially Russia and India). Respondents believe New Zealand will rely less on exports to the European Union (EU) and to a smaller extent

TABLE 2.5: EXPECTED PROPORTION OF SHEEP MEAT EXPORTS BY VALUE IN 10 TO 15 YEARS

PROPORTION OF TOTAL SHEEP SALES	CURRENT (%)	10–15 YEARS (AVERAGE %)	STANDARD DEVIATION ¹
European Union	64	55.1	8.6
Middle East and North Africa	6	15.8	3.6
China	3	7.3	2.9
North America and Mexico	14	9.0	3.1
Japan	2	2.6	1.2
Other (including Russia and India)	12	10.2	5.0

Note

¹ Standard deviation is a measure of the dispersion of individual answers from the mean. Generally speaking, the higher the standard deviation, the lower the degree of certainty.

⁶ The spot market is characterised by transactions that have immediate effect, rather than, say, agreeing to a contract with a delivery rate at some time in the future.

North America (Table 2.5). The expected reduction in the proportion of sheep meat exports to the EU is relatively uncertain. No significant changes in market share are expected for beef exports (Table 2.6). These views are broadly consistent with some of the broad trends in population, income growth and forecast global demand identified later in this report.

TABLE 2.6: EXPECTED PROPORTION OF BEEF EXPORTS BY VALUE IN 10 TO 15 YEARS

PROPORTION OF TOTAL BEEF SALES	CURRENT (%)	10–15 YEARS (AVERAGE %)	STANDARD DEVIATION
United States and Canada	47	44.3	6.8
South Korea	11	11.4	2.2
Japan	10	10.6	2.2
Taiwan and ASEAN ¹	18	19.3	3.9
European Union	6	6.8	3.4
Other (including Russia and India)	8	8.5	4.1

Note

¹ ASEAN is the Association of South East Asian Nations.

INNOVATION INVESTMENT

The reliance on producer and processor efficiency to sustain the meat sector was ranked as the eighth most important strategic factor, whereas respondents identified the need for increased investment in research and development as the second most important. The importance placed on research and development investment is consistent with a strong recognition of innovation more broadly⁷ in the survey.

For instance, respondents also considered the following factors to be of future importance:

- › Processor investment into market and/or product development.
- › Improved on-farm environmental performance.

While productivity improvements will be important to remain competitive, the sector's future clearly lies in creating more value in its products, rather than competing on price alone.

MAF also considers that human capability is a vital component of the sector's investment in innovation. Challenges exist in attracting labour right through on-farm labour to

⁷ Research and development, although important, are not the sole activities associated with innovation. The "innovation value chain" comprises a suite of complementary activities, including: education and training; research, science and technology; technology transfer and product development; commercialisation; and market development. This value chain is not linear and innovation results from complex interactions between different components. Successful innovation systems require alignment and co-ordination between all of the constituents involved.

The sector is adept at identifying both challenges and opportunities, but less confident about its ability to fully exploit them.

processing workers to top management. A sector so important to the New Zealand economy needs to be able to attract the best and brightest. Investment in people can lift the skill base in the industry, and attract and retain top people who can then help drive the sector forward.

MARKETING

Most of the identified factors of strategic importance could be portrayed as either an opportunity or a challenge. This duality is especially relevant in marketing. Respondents generally agree that value can be added at the marketing end of the business. Some of the mechanisms that the sector could employ include a greater proportion of expenditure on marketing, increased ownership or control of marketing and distribution channels, more use of “New Zealand” in branding and a higher level of co-operation between companies in international marketing. None of these can be seen as a single solution, nor are options limited to this subset of choices. Indeed it is apparent that, while some change in marketing is required, the exact change is likely to differ in different companies and for different products.

POTENTIAL BIOSECURITY INCURSION

Most of the Delphi survey respondents agreed that New Zealand would probably have a significant biosecurity incursion in the next 10 to 15 years. Increased global movements of goods and people present challenges for all countries in maintaining biosecurity. Respondents also generally agree that the control methods and procedures are good and improving, so that the incursion would be contained and controlled. Nonetheless, respondents disagreed about the incursion’s significance on exports, ranging between the following extremes:

- › produce from containment areas would be isolated, while exports from other parts of the country would continue as usual;
- › major controls on all imports from New Zealand could lead to a six-month period of disruption, at least; New Zealand’s reputation would suffer, leading to reduced ability to market.

These diverse views suggest that the impacts could differ for different marketing and sales strategies: commodity traders expect to continue to maintain throughput, albeit at low prices, while niche marketers may lose comparative marketing advantage, forcing lower prices – both immediately post-incursion and potentially well into the future.

A major food safety scare could possibly have similar impacts on the sector’s

reputation. Supply chain management and verifiable traceability systems could reduce the risk and impact of any such occurrences.

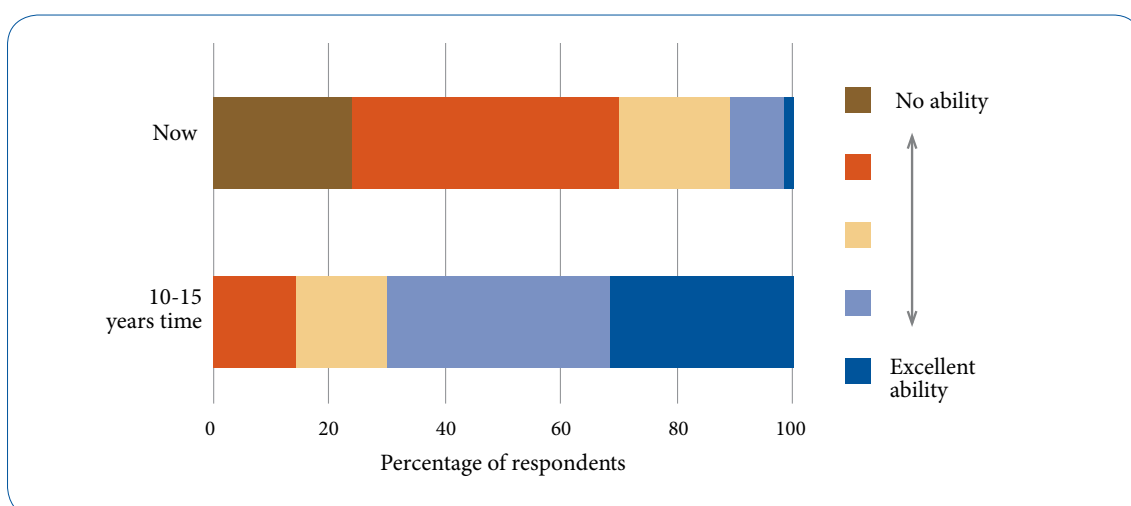
FUTURE STATE OF THE SECTOR

Most respondents were optimistic in general about the long-term future of the sheep meat and beef sector, despite many of their specific expectations being negative. Two-thirds of respondents agreed the sector would be a good investment in 15 years (a capstone question intended to summarise their views), while a further quarter neither agreed nor disagreed.

The sector is adept at identifying both challenges and opportunities, but less confident about its ability to fully exploit them. Notwithstanding this, the sector appears to be more optimistic for the future than they are in the present. Respondents were asked their opinions on the sector's ability to meet challenges and take advantage of opportunities now and in 15 years. Generally, the sector's future abilities were considered better than its current abilities. This could reflect either general emotion-based optimism or a real expectation based on analysis. The Delphi survey doesn't allow us to distinguish between these possible explanations.

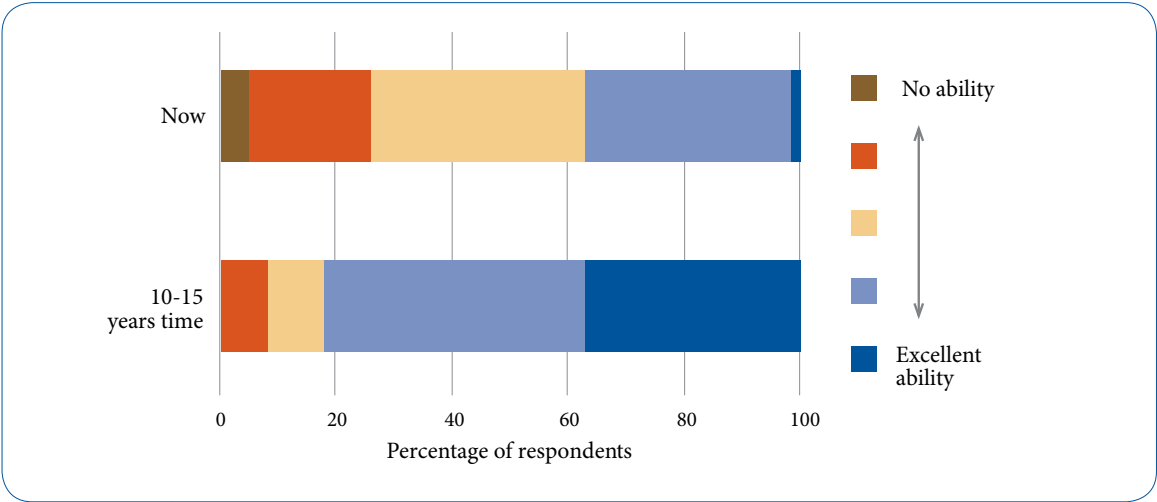
For instance, respondents considered that the sector will have greater future ability to meet challenges from a strong New Zealand dollar (Figure 2.3). This may be due to, say, increased innovation and marketing investment leading to the sector creating and capturing more value. Respondents were not, however, confident in the sector's ability to undertake the desired increase in investment in these areas, making it difficult to

FIGURE 2.3: SECTOR'S ABILITY TO MEET CHALLENGES FROM A STRONG NZ DOLLAR NOW AND IN 15 YEARS



ascertain the source of this optimistic future. In contrast, the sector’s ability to take advantage of environmental, ethical and food safety attribute opportunities (Figure 2.4) can be clearly linked to respondents’ confidence in improved on-farm environmental performance.

FIGURE 2.4: SECTOR’S ABILITY TO TAKE ADVANTAGE OF ENVIRONMENTAL, ETHICAL AND FOOD SAFETY ATTRIBUTE OPPORTUNITIES NOW AND IN 15 YEARS



MAJOR CONSTRAINTS TO THE FUTURE SUCCESS OF THE SECTOR

Respondents saw the sector’s culture (87 percent agreed) and structure (76 percent agreed) as major constraints to the sector. The culture and structure of the industry is to some extent the consequence of the competitive industry environment where industry participants respond to the economic drivers, particularly the need to maximise throughput.

However, a culture may become ingrained within companies and, by extension, within New Zealand’s sheep meat and beef industry. For instance, in the meat industry, we can see collaboration in some areas but much less of an appetite to work together in other areas. The intensely competitive nature of the sector’s procurement and export markets may possibly foster a certain adversarial culture in the sector. The perpetuation of this adversarial culture may lead to a less-than-optimal level of collaboration in areas such as research and development and market development, where it may be otherwise economically rational to collaborate.

The intensely competitive nature of the sector's procurement and export markets may possibly foster a certain adversarial culture in the sector.

Cultural constraints are unlikely to be limited to the processing sector. On-farm decisions and farmers' relationships with processors significantly influence the success of the sector. As a generalisation, farmers' short-term price maximisation behaviour results in the predominance of spot market relationships between farmers and processors. While farmers may benefit in the short-term from overcapacity in the processing industry, because it provides them with more power in the supplier-processor relationship, this may not be in their longer-term interests. Overcapacity may reduce processors' ability to make sufficient returns to enable them to invest in areas that could improve future returns to the sector. Short-term profit maximisation may be at the expense of medium-term viability.

Farmers seem reluctant to commit to longer-term contractual relationships with processors, despite those relationships potentially benefiting both parties. It is difficult to ascertain to what extent this reluctance is simply farmers responding to incentives (for example, spot prices may provide better returns for farmers) or whether, as identified by respondents, cultural constraints have a significant impact (for example, a lack of trust between farmers and processors).

SUMMARY CONCLUSION

The Delphi survey results could be summarised as follows:

- › Respondents have a clear vision for the sector in 10 to 15 years; the vision is of a economically and environmentally sustainable industry that invests in research and development, has a greater focus on the market, and is more co-ordinated across the value chain.
- › Respondents are less certain that this vision can be achieved.
- › They are confident, however, that in the future the sector will be better placed to meet challenges and take advantage of opportunities than it currently is.





3 FEATURES OF THE CURRENT NEW ZEALAND MEAT INDUSTRY

The results from the Delphi survey indicate what the respondents in the sector think the industry may look like in 10 to 15 years. To better uncover the opportunities and challenges that will face the sector in such a timeframe we also looked at the current system and some of its inherent constraints and benefits.

New Zealand's sheep meat and beef sector can be characterised as a complex and interrelated food value chain. Its operation is driven by both production-centred push forces and consumer demand pull in overseas markets. Below, we explore:

- › some key characteristics of the market and trade environment;
- › the processing sector;
- › the pastoral agri-system;
- › the interrelations across the meat sector's value chain.

This report depicts the meat value chain as being from market back to farm. This is not to deny the importance of on-farm production, as the sector's pastoral farming capabilities have clearly been the source of much of its competitive advantage. The meat value chain is an interconnected loop, with production influencing demand, and demand impacting on production. Recognising this interconnectedness is important in understanding the meat sector.

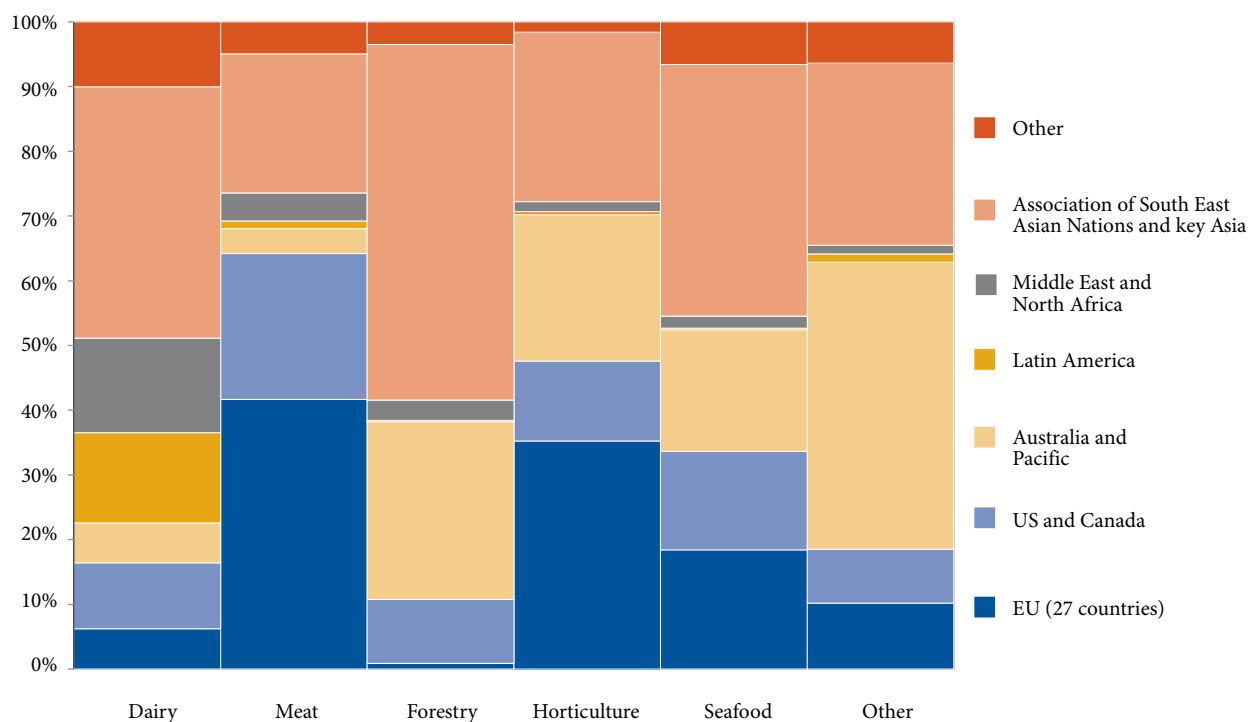
THE MARKET, EXPORTING AND THE TRADING ENVIRONMENT

The sheep meat and beef sector relies on a small number of traditional markets. This differs from some other commodity groups exported by New Zealand that supply a greater proportion of product to more diversified markets (Figure 3.1).



Photo: Meat & Wool New Zealand.

FIGURE 3.1: TOTAL NEW ZEALAND FOOD AND BEVERAGE EXPORTS BY REGION (NZ\$, MILLION, 2008)



Source: World Trade Atlas, based on a similar chart by Coriolis Research (2005).

SHEEP MEAT MARKETS

New Zealand's sheep meat exports began diversifying into new markets when the United Kingdom (UK) joined the European Community in the 1970s (McDermott et al, 2008). However, the sheep industry still depends on the UK, and the EU more widely, as its main export market. The top five export markets for New Zealand lamb by volume are the UK, Germany, France, the United States of America (US) and Belgium (Meat & Wool New Zealand, 2008).

The sheep industry has moved from concentrating on exporting frozen carcasses, to exporting an increasing variety of products. While traditional cuts (such as legs) and primal cuts (for further processing) still dominate exports, there has been a shift towards more chilled cuts, although this has met with some resistance from domestic suppliers in certain EU markets due to the increased competition at the premium end of the market. From 1997 to 2008, the proportion of chilled lamb export quantities rose from 9.6 to 19.8 percent for years ended 30 September. This increase is shown in Figure 3.2, as is the ratio of chilled lamb prices to average lamb prices.

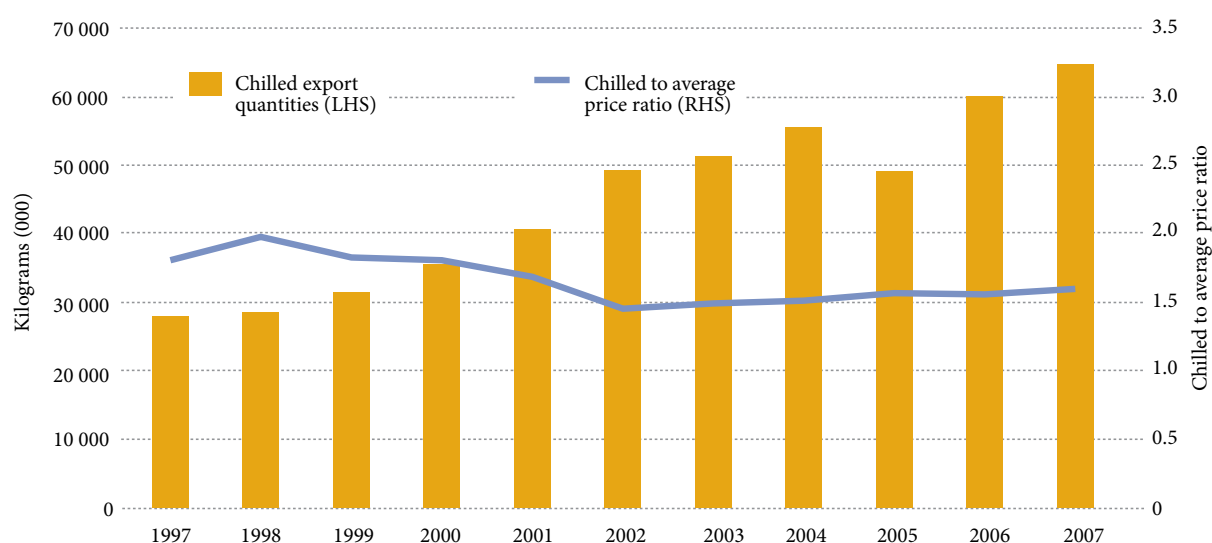
New Zealand manufacturing beef is highly sought after by international food service chains because of such qualities as food safety and certainty of supply.

Lamb is only a small part of total global meat consumption (less than 5 percent). Outside of traditional markets there is not strong product recognition, although many developing markets, such as those in North Africa and parts of Asia, are traditional sheep meat consumers. Indeed, there is very little difference in the per capita consumption of sheep meat in OECD and non-OECD countries. However, the prices paid in OECD countries tend to be much higher. Notwithstanding the challenges of developing new markets, the value of sheep meat exports to Asia and North America has increased significantly in the last 20 years⁸. These markets demand a different product mix, with less emphasis on traditional cuts (Meat & Wool New Zealand, 2008).

BEEF MARKETS

New Zealand's beef industry primarily exports manufacturing beef. North America accounted for 47 percent of exports by value for the year ended June 2007. Although manufacturing beef is traded as a commodity product, New Zealand beef has some important points of differentiation. Lean New Zealand grass-fed beef is suitable for mixing with the fattier cuts and the trimmings of grain-fed beef to produce ground beef. New Zealand manufacturing beef is highly sought after by international food service chains because of such qualities as food safety and certainty of supply. Chilled beef comprises 6.6 percent of total beef exports, compared with 19.5 percent for lamb.

FIGURE 3.2: CHILLED LAMB EXPORTS AND RELATIVE PRICES OVER TIME



Source: Statistics New Zealand and MAF.

⁸ Figures sourced from World Trade Atlas.

Beef exports to Asian markets have been increasing over the last 20 years⁹. South Korea, Japan and Taiwan make up three of the sector's top five most important export markets. Secondary cuts and prime cuts make up a greater proportion of these markets compared with the US.

MARKET ACCESS

Protectionism is pervasive in many of New Zealand's export markets. However, New Zealand does have favourable market access in some important markets. As a result of the GATT Uruguay Round of multilateral trade negotiations concluded in 1994, New Zealand obtained country-specific tariff quota access to four meat markets, the most valuable of which are the EU sheep meat and goat meat market and the US beef and veal market.

New Zealand's favourable quota access arrangements provide a competitive advantage over some international competitors. Tariff-rate quotas allow New Zealand to export quantities of product at lower tariff rates. As New Zealand maintains control of the licensing arrangements for the most valuable quota markets, the sector is able to benefit from the higher market prices prevailing in these protected markets.

Quota allocation based on production may, however, exacerbate the issue of production-driven business models (as discussed in the processing section below). The short-term allocations of quota may also impede longer-term investments in those markets, due to the insecure nature of the property right (Evans and Meade, 2007).

Restrictive trade policies in other markets, such as Asia, have increased the relative appeal of quota markets and increased the challenges in developing new markets. Recent efforts to lower trade barriers (for example, the New Zealand-China Free Trade Agreement) will make it easier to develop alternative markets to alleviate the reliance on current "quota markets".

BRANDING

New Zealand lamb has strong product recognition in European markets. However, with some exceptions, there is little use of strong New Zealand "consumer" or retail brands. Reasons for a lack of strong retail branding may include:

- › the pervasive use of supermarket or "home brands";

⁹ Figures sourced from World Trade Atlas.



- › a large proportion of New Zealand's meat is not sold through retail channels (that is, it is used in the food service industry) or is sold through intermediaries for further processing;
- › low profitability and/or capital constraints in the meat processing industry can result in a lower proportion of expenditure on investments, such as product development, branding and promotion.

RETAIL VALUE CHAIN

Since the early 1990s the food industry has consolidated considerably. Many retail chains have started to integrate backwards through the supply chain (OECD, 2006). UK supermarket chains in particular have considerable market power and are very large organisations. Supermarkets deal with a high number of suppliers, whereas suppliers (such as meat exporters) have relatively fewer customers that they supply. This affects the market power of buyers and sellers. Other markets are currently more diverse, with a greater number of retail outlets and a higher proportion of New Zealand meat going to the food service industry.

EXPORT DOMINANCE

New Zealand's sheep meat and beef sector depends heavily on the export trade (Table 3.1) compared with its international competitors. Accordingly, the sector is greatly affected by global economic conditions and the international trade environment. The sector is particularly exposed to fluctuating exchange rates and variations in global supply (such as through changes in agricultural policy or adverse weather impacts).

TABLE 3.1: SHEEP MEAT AND BEEF PRODUCTION AND EXPORT VOLUMES FOR SELECTED COUNTRIES

COUNTRY	SHEEP MEAT			BEEF		
	SHEEP (MILLION)	PRODUCTION VOLUME (000 TONNES)	EXPORT VOLUME (%)	BEEF CATTLE (MILLION)	PRODUCTION VOLUME (000 TONNES)	EXPORT VOLUME (%)
New Zealand	40.7	525	90	4.4	534	83
Australia	93.0	626	53	28.0	2 000	64
Brazil	–	–	–	195.0	8 900	29
Uruguay	11.1	140	11	11.7	1 151	78
Republic of Ireland	5.5	67	73	6.7	591	88
Northern Ireland	2.0	18	–	1.3	130	–

Source: AgResearch (2008).

Sheep meat and beef also compete against substitute protein sources, including intensively farmed poultry and pork.



INTERNATIONAL COMPETITORS

New Zealand's sheep meat and beef industry faces a variety of international competitors. New Zealand, Australia and the EU currently dominate world exports of sheep meat, while Brazil currently dominates world exports of beef. The majority of the world's meat production is consumed domestically and New Zealand competes with both these domestic producers and other exporters. EU production levels have been decreasing over the last five years due to reforms to the EU's Common Agricultural Policy. This trend is forecast to continue.

Sheep meat and beef also compete against substitute protein sources, including intensively farmed poultry and pork. Real global prices of poultry and pork have decreased significantly over the last 20 years (Coriolis, 2005). Globally, the pork and poultry industries have highly integrated supply chains, as do some grain-fed beef industries. While the pork and poultry industries (as well as other intensively farmed proteins) face rising costs through higher grain and energy costs, their production systems and feed conversion rates enable them to remain competitive compared with the cost structures of the New Zealand meat industry.

FROM FARM TO FOOD – THE MEAT PROCESSING INDUSTRY

New Zealand has a competitive advantage in meat processing primarily due to the capabilities that have been built up over the industry's long history. The sector has a network of trade relationships, with an enviable position as a preferred supplier to many markets. There has also been significant innovation in the meat processing sector over the last 20 years, for example, upgrading of facilities to meet higher specifications, improved processing efficiencies and the production of more chilled products (McDermott et al, 2008).

Much of New Zealand's competitive advantage in meat processing is based on the sector's well-earned reputation as a reliable supplier of safe, quality meat. This reputation is largely built on a foundation of food safety, animal welfare and biosecurity systems and standards.

KEY DRIVERS

Notwithstanding the above, the meat processing sector is widely viewed to have underperformed financially in recent years. The sector appears to be inherently unstable, although the causes and extent of this instability are debated.

McDermott et al (2008) identify a set of critical drivers of instability for the

Meat processing is a dynamic industry, and over time competitive market forces lead to changes in processing capacity.

sheep industry that include:

- › overcapacity within the processing sector;
- › the seasonal nature of production;
- › the regulatory environment, including:
 - quota allocation;
 - low barriers of entry into the processing industry¹⁰;
- › lack of farmer investment in the processing industry;
- › the dominance of spot market relationships between producers and processors.

These same factors appear to also apply to beef processing.

OVERCAPACITY

Structural overcapacity in the meat processing industry can lead to sub-normal profits, limiting the industry's ability to invest. Meat processing is a dynamic industry, and over time competitive market forces lead to changes in processing capacity. However, structural overcapacity currently exists in the meat processing industry as capacity has not decreased at the same pace as the reduction of livestock numbers. This lagged adjustment of processing capacity can be caused by:

- › high exit costs, including redundancy payments and plant decommissioning costs;
- › the signalling effects¹¹ from downsizing (including local community and supplier "backlash");
- › inability of firms that reduce capacity to capture the majority of the rationalisation benefits due to the geographic positioning of plants and consequential transport price differential if they have to transport their stock further;
- › the need for open co-operatives to maintain additional capacity for extraordinary killing demand resulting from adverse climatic events (supplier-shareholders expect their co-operative to be able to take their stock even during periods of peak throughput, despite the fact many farmers tend to sell stock on the spot market and do not commit supply to their co-operatives).

New Zealand also has a significant number of single-plant meat companies. Downsizing for these companies would usually result in an exit from the industry.

¹⁰ McDermott et al (2008) argue that the regulatory environment contributes to excess capacity and competition for livestock through low barriers to entry into the processing industry and high exit barriers. Lower entry barriers are usually consistent with dynamic efficiency as new players enter the industry and thus are generally a positive for an industry. High exit barriers, however, can lead to inefficient processing remaining in the industry. Indeed, Arthur Grimes (*Instability in the New Zealand Meat Processing Industry: An Economic Analysis*, 1994) argues that the significant costs associated with exiting the meat processing sector could effectively raise a barrier to entry, as incumbent firms wanting to exit the industry may be encouraged to price below marginal cost in order to avoid the cost of closing a plant.

¹¹ Signalling effects are the idea that an agent's actions convey some meaningful information about itself to other parties. In this instance, when a processor downsizes, suppliers may perceive that it is losing market share or its business model is no longer competitive. If a supplier became concerned that a processor may cease to operate they may be more likely to switch their supply to an alternative processor.

Short-term drivers may detract from the sector's ability to implement medium-term value-enhancing strategies.

SEASONALITY, UNCERTAIN SUPPLY AND ITS IMPACT ON THE PROCESSING INDUSTRY

Seasonal fluctuations in the processing of slaughter stock also lead to short-term processing overcapacity in the off-season and shoulder season. Such periods of seasonal overcapacity may provide short-term incentives for processing firms to compete vigorously for stock by paying higher procurement prices to farmers in order to maximise capital utilisation (plant throughput), reduce average unit costs and increase share of the meat quota markets. These short-term drivers may detract from the sector's ability to implement medium-term value-enhancing strategies.

The dynamics of seasonality and overcapacity contribute to the following:

- › **SPOT RELATIONSHIPS BETWEEN FARMERS AND PROCESSORS:** Meat producers can switch processors on a daily basis and tend to favour the flexibility of the spot market for slaughter stock compared with longer term-contracts (discussed further below). During periods of overcapacity farmers will have increased power in the farmer-processor relationship – farmers are therefore less likely to bind themselves to longer-term commitments.
- › **PRODUCTION-DRIVEN BUSINESS MODELS¹²:** As throughput increases, average processing costs tend to decrease, that is, processing plants are usually subject to diminishing marginal costs up to a certain point. During periods of excess capacity, firms will tend to pay higher prices for slaughter stock, until the returns to processors fall below average processing costs and towards the marginal processing cost of that stock (the additional cost of processing one more unit). This results in processors receiving less-than-normal economic returns.

The dairy industry displays similar seasonal fluctuations in supply. Idle processing capacity in the off-season is also costly. Milk is, however, much more perishable than livestock – it needs to be picked up daily. Dairy farmers value longer-term contracts as they require certainty that their milk will be picked up every day – if not, their product becomes worthless. Suppliers do not switch processors on a short-term basis; they only feasibly switch at a season's end. Dairy processors are therefore essentially contracting suppliers for a season's milk supply – they are more certain of the supply that they will receive throughout the season and do not have to compete for farmers' milk on the spot market. Also milk supply is more consistent on a day-by-day basis compared with sheep and beef farmers, who tend to hold livestock on-farm when they have sufficient feed but seek to utilise processors' capacity when feed is short (for example, during droughts).

¹² As opposed to consumer-driven business models – although we note that meat processing business models are unlikely to exist at either extreme, and instead exist on a continuum of production push and consumer pull factors.

There is no overwhelming evidence to suggest that co-operatives, in general, have inferior financial performance or that they are relatively inefficient compared with investor-owned firms.



Preferential market access arrangements in the form of quota have certain advantages for the sector in that relatively high (compared with other markets) returns are achievable on some quota markets. The quota system, however, also has disadvantages due to the distortions it leads to, or exacerbates, in the slaughter stock market. Production-driven business models may be reinforced by quota allocation systems based on a company's proportion of production, as each additional animal slaughtered allows increased access to valuable quota markets. An extra dollar spent on procurement at the margin is likely to be more profitable than other uses of the funds simply as a result of the quota allocation mechanism. Excess supply of slaughter stock can occur as farmers respond to the inflated prices caused by quota-fuelled competition among processors of slaughter stock. This quota-driven, extra incentive to spend on slaughter stock procurement is likely to be to the detriment of investment in marketing and other means of improving returns on a sustainable basis.

Considerable effort has been applied by both industry and government to find a solution to this negative impact arising from quota allocation while retaining farmers' current level of benefits from quota. A superior allocation method that ensures that farmers continue to capture most of the quota benefits, while avoiding most of the longer-term negative effects of the current approach to quota allocation, has proven elusive so far.

FARMER INVESTMENT AND THE CO-OPERATIVE MODEL

The two large co-operatives currently make up over half of New Zealand's sheep meat processing sector. The co-operative form has certain advantages and disadvantages compared with investor-owned firms. The following discussion on the co-operative model is drawn from the literature on co-operatives and the issues are applied theoretically. It does not specifically relate to the New Zealand meat industry or any particular company. In 2005, MAF commissioned the New Zealand Institute for the Study of Competition and Regulation to produce a report on the role and significance of co-operatives in New Zealand agriculture (Evans and Meade, 2005). Some of the key findings include:

- › There is no overwhelming evidence to suggest that co-operatives, in general, have inferior financial performance or that they are relatively inefficient compared with investor-owned firms.
- › In general, the international competitiveness of co-operatives is not unambiguously better or worse than an investor-owned firm.
- › Co-operatives have been found to enjoy certain competitive advantages over investor-owned firms, such as:
 - providing supply security (although this is not as evident in the meat industry);
 - an ability to co-ordinate at the producer end of the agri-food supply chain.

- › Co-operatives are often predicted to suffer disadvantages due to:
 - capital constraints;
 - a relative producer focus.
- › Co-operative governance is at its best when the co-operative owner-patrons have similar interests, which is more likely when they produce an undifferentiated farm output and/or where farmers are culturally alike.
- › Evidence exists for co-operatives being the only financially viable organisational form in “hard times”. Conversely, co-operatives are predicted to become less financially viable than investor-owned firms when the industries in which they operate become competitive.
- › Co-operatives are often reorganised or restructured, indicating “adaptive efficiency”.

An issue that may be of particular concern to the meat sector is access to capital and incentives for farmers to invest in their co-operatives. Co-operatives usually depend on their members for capital and this can lead to a situation where co-operatives are unable to reinvest at the desired rate, or are unable to expand as rapidly as they may optimally intend.

Traditional co-operative shares are often non-tradable and difficult to redeem and have no capital appreciation. If an investor does redeem their shares they could potentially leave “money on the table”, in that they will be unable to capture any increase in value that their investment may have created in the company over time. Furthermore, supplier-shareholders may be less willing to allow the co-operative to retain earnings if those retained earnings do not transfer to the farmer’s balance sheet through an appreciation in the share price. This can lead to a lack of incentives for greater investment in co-operatives and instead create incentives for short-term optimisation behaviour by farmer-shareholders.

In the case of the meat industry, there is some evidence that the investment in processing is not systemically low. Between 1990 and 2005 there has been a significant net increase in investment from the major processors, after accounting for depreciation and rationalisation costs (Evans and Grace-Webb, 2007). This investment is likely to fund the development of technology, upgrading and construction of plants and processing facilities, and expansion into international markets (Evans and Grace-Webb, 2007).



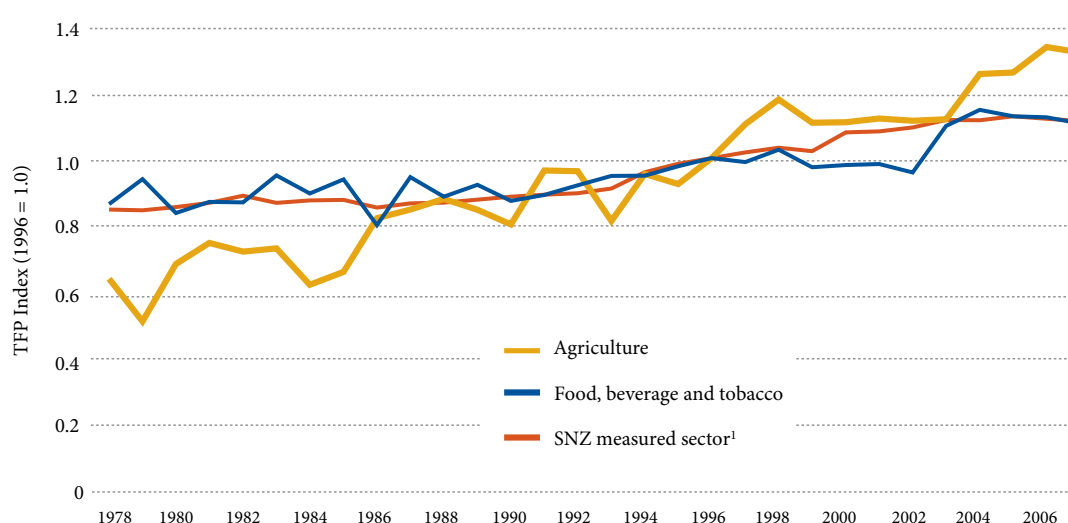
Photo: Meat & Wool New Zealand.

The Delphi survey indicates, however, that the sector considers there are opportunities for increased levels of investment in a number of areas. It is feasible that one of the reasons why these investment opportunities are not currently being undertaken may be the capital constraints outlined above. For instance, there is some evidence that over the last few years non-co-operative companies may have made greater new investments than co-operatives (Evans and Grace-Webb, 2007). Co-operatives may therefore find benefits in continuing to look for ways to address constraints that could preclude them from investing in net beneficial opportunities, whether these constraints are due to business structures or debt-laden balance sheets.

PRODUCING MEAT IN A PASTORAL AGRI-SYSTEM

Sheep and beef production in New Zealand is primarily conducted under a pasture-based model¹³ due to New Zealand's abundance of suitable land and relatively benign climate. The pasture-based model demands less variable inputs than a feed-lot system, and generally has lower feed, labour and energy costs and a lower carbon footprint. New Zealand no longer maintains the mantle of the world's lowest-cost meat producer, although the growth in on-farm agricultural sector productivity (2.5 percent per annum) between 1978 and 2007 has been substantially higher than that of the wider economy (0.9 percent per annum). Figure 3.3 outlines total factor productivity trends since 1978.

FIGURE 3.3: TOTAL FACTOR PRODUCTIVITY TRENDS



Source: MAF and Statistics New Zealand.

Note

¹ Statistics New Zealand measured sector is a measure of the wider economy, covering ANZSIC codes A to K plus P from 1978 onwards and added in codes LC and Q from 1996 onwards.

¹³ A notable exception is ANZCO's "5 star" feed-lot beef system at Wakanui in Canterbury, primarily serving the Japanese market.



These productivity gains are a necessary factor in keeping the sector competitive, but alone are unlikely to ensure longer-term profitability.

Although capabilities and historic investment in pastoral farming have been the fount of much of the sector's competitive advantage, producing a consistent high-quality product within the constraints of a biophysical environment has provided many challenges to sheep and beef farmers. Not the least of these challenges is dealing with climate and weather variability and how this impacts on seasonality of production, feed risk and farmers' ability to plan ahead and credibly commit to long-term supply contracts.

There is an inherent conflict between producing meat on a grass-based system in unison with natural seasonal variations in order to minimise the costs of production, and producing meat on a more consistent year-round-supply basis with the inevitably higher cost structure. A pivotal issue for industry participants is striking the right balance between cost minimisation and value creation.

COMPETING LAND USES AND THE SQUEEZE ON SHEEP AND BEEF FARMING

Seasonality impacts and the risks of adverse climate and weather conditions have been exacerbated over the last 10 years due to changing land use. New Zealand sheep and beef production is a sub-system of the larger agri-system, consisting of interdependent extensive hill country farms and intensive relatively flat finishing farms. Decisions and impacts on one part of the agri-system can have consequences for another part, sometimes in quite subtle ways.

Land use change has been driven by relative economic returns to other industries, in particular dairy, and urban encroachment and lifestyle blocks. Returns for dairy farming increased dramatically in 2007/08, especially compared with returns to the sheep and beef industries. Conversions from sheep and beef to dairy or dairy support predominantly involve the relatively intensively farmed flat land.

Proportionately the sheep and beef industry now depends more on extensive hill country. This increases the risks and reduces the options to sheep and beef farming, as less "easier" country is available to finish stock. This can be a particular concern during seasons with adverse growing conditions, for example, during droughts. Supplementary feed is more difficult to harvest and feed out on hill country farms. A likely consequence may be lower stocking

A pivotal issue for industry participants is striking the right balance between cost minimisation and value creation.

rates on hill country farms. This will mitigate some of the increased risks associated with a more homogeneous sector landscape and the need to carry young stock for a longer period so that they can be finished on the property rather than sold “store” to other farmers running easier country.

More marginal hill country land may also be planted with trees if the relative profitability of forestry improves as carbon market developments suggest. This will further reduce the total land under sheep and beef farming, as the sector will be feeling the squeeze from both dairy and forestry.

The flexibility to change to different farming models is generally constrained by the particular farm’s characteristics and location. More remote hill country farms have fewer alternative land uses.

SECTOR SIZE AND RESILIENCE

Sheep and cattle are traditionally run together on farms to allow integrated pasture management. As well, wool has historically provided a significant income stream for sheep farmers, though this has declined significantly in recent years (Figure 3.4), which has impacted substantially on farm profitability. Accordingly, meat has become an increasingly important part of the farm income. Lacking the buffer of an alternative income stream, farmers have less financial resilience than previously and are more

FIGURE 3.4: CONTRIBUTION OF WOOL TO SHEEP FARMER INCOME AND NEW ZEALAND EXPORT EARNINGS



Source: Meat & Wool New Zealand.

susceptible to global factors influencing the meat sector. Nevertheless, wool makes up a not insubstantial part of New Zealand's export earnings. Wool generated \$615 million in export earnings for the year ended 31 March 2008.

Farmers who are restocking after the recent drought may take several years to reach the same pre-drought stock levels. Figure 3.5 shows the national sheep numbers and total pasture area between 1979 and 2007.

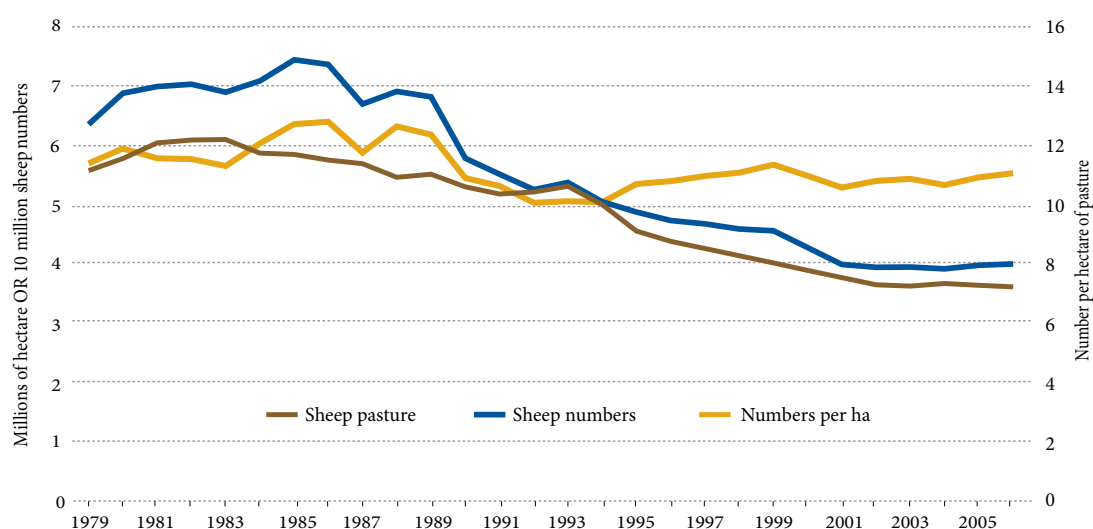
A high proportion of beef is produced as a dairy industry by-product, sourced from bobby calves and cull cows. The size of the beef sector has therefore been affected less by changing land use. However, increased prevalence of dairy beef indicates that manufacturing beef is likely to be increasing as a proportion of beef production compared with prime beef.

SPOT MARKET RELATIONSHIPS, SUPPLY INCENTIVES AND PROCESSOR RELATIONSHIPS

Collectively, farmers' supply decisions are a decisive part of the current sector's operation. Through these supply decisions, farmers retain significant influence over their industry's future. Meat farmers can switch processors on a daily basis and tend to favour the spot market's flexibility over longer-term contracts.

Farmers may find it hard to credibly commit a large proportion of their production to longer-term contracts due to the constraints of producing meat

FIGURE 3.5: NATIONAL SHEEP NUMBERS AND TOTAL AREA COVERED¹



Source: MAF.

Note

¹ This graph is up to 2006 so does not include more recent destocking.

While a volatile exchange rate is often cited as a source of woe for the sector, it can also act as a buffer to smooth the impacts of international events on the domestic economy.



in a biophysical environment. For example, changing weather patterns may make it more difficult for a farmer to deliver stock on timelines previously agreed. On-farm production is driven by grass growth; in many farms use of supplementary feed is restricted by both financial and practical considerations.

Moreover, many farmers appear to lack a medium-term strategy in terms of their relationship with processors. It is not at all apparent that farmers are prioritising the performance of their co-operatives as prosperous and successful businesses. This is evidenced by a lack of commitment by farmers to supply the businesses that they own. Investments in co-operative processors may therefore be seen as an adjunct risk-minimisation investment, in that if no other processor is willing to offer a better short-term return then the co-operative is available as a “processor of last resort”.

However, the whole sector is not always driven by short-term farmer-processor relationships. Parts of the industry are engaged in more strategic and longer-term relationships. It was reported that, during the recent nationwide drought, farmers who had consistently supplied the same processor over a period of time were able to access processing space at the peak of the season, despite large drought-impacted slaughter numbers meaning that other stock was not processed in such a timely manner. Some smaller processors have much closer working relationships with their farmer-suppliers, ensuring the right type of product is delivered when it is needed. Processor and farmer work together to find a way to deliver on these agreements. Other larger processors have been implementing strategies that will take their organisations in the same direction.

Another model is using “toll-processors”, with suppliers and exporters having the direct relationships with end purchasers.

COMMODITY PRICE AND EXCHANGE RATE IMPACTS

The sheep meat and beef sector is highly exposed to the international trading environment. Returns depend heavily on international commodity prices and the New Zealand dollar exchange rate. Changes in either of these factors usually translate directly into farm-gate prices for animals, and thus on-farm profitability. For instance, between 1977 and 2007 the correlation between the beef schedule price and the US/New Zealand dollar exchange rate was -0.78 , that is, changes in beef schedule prices were highly related to changes in the exchange rate. Lamb prices were somewhat related to the UK pound/New Zealand dollar exchange rate, but did not show the same high level of correlation (-0.61).

While a volatile exchange rate is often cited as a source of woe for the sector, it can also act as a buffer to smooth the impacts of international events on the domestic economy.

Processors may also value farmers smoothing their supply curves in order to reduce seasonal spikes.



Exchange rates are cyclical, reflecting comparative economic growth rates between countries, comparative interest rates and risks, and international commodity prices. During times of economic downturn the New Zealand dollar usually depreciates against New Zealand's major trading partners, with a resulting upswing in returns for exporters. A strengthening dollar is usually the result of an improved economic outlook and, for New Zealand, is often driven by higher soft commodity prices.

Between 1982 and 2007, quarterly price data shows that, around 50 percent of the time, falling (rising) international beef prices were buffered up (down) by changes in the US/New Zealand dollar exchange rates. Double whammy positives occurred 24 percent of the time, when international prices were rising and the New Zealand dollar was depreciating. This last occurred in 2001/02, when favourable weather conditions over much of the country, high international commodity prices and low exchange rates contributed to a record level of sheep and beef farm profit before tax. Double whammy negatives occurred 26 percent of the time, the most significant during 1994 and 1995.

Broadly similar results were found for international lamb prices and UK pound/New Zealand dollar exchange rates, except that there were more double whammy negatives (29 percent of the time) than positives (21 percent of the time). A strong New Zealand dollar from 2007 to mid-2008 and moderate international lamb prices contributed significantly to reduced farm income.

VALUE CHAIN INTERRELATIONSHIPS

New Zealand has a long history in meat production and therefore has a mature supply chain with associated industries built around it. These industries range from farm equipment and input suppliers, to consultants and financial services, logistics and research and development organisations.

Currently, a clear conflict faces individual sector participants and different points across the value chain. For instance, processors see benefits in being able to elicit longer-term supply commitments from farmers to ensure supply certainty. At the same time processors face short-term financial incentives to procure on the spot market to both maximise capital utilisation and gain additional access to quota markets.

Processors may also value farmers smoothing their supply curves in order to reduce seasonal spikes. The benefits from flatter supply profiles are likely to increase for processors as:

Farmers on the other hand would prefer to arrange supply in harmony with their “grass growth curve”.

- › plants become more capital intensive (for example, through investment into robotic processing technologies)
- › new markets require year-round supply of chilled cuts, rather than the seasonal supply that EU markets prefer to complement their own supply seasons.

Farmers on the other hand would prefer to arrange supply in harmony with their “grass growth curve”. Spreading the season beyond its natural bounds adds both cost and risk to the farmer.

Human capability also appears as an issue across the value chain. Sheep and beef farming has an ageing workforce, with many farmers likely to exit the industry over the next 10 to 15 years. The processing sector has faced difficulties in securing seasonal labour in the recently tight labour market. This is particularly an issue in the more rural locations.

The bulk of New Zealand’s meat exports are traded via commodity markets, either through intermediaries and subsidiaries or direct to large end-users in the retail or food service industries. Most of New Zealand’s meat exports are sold rather than marketed, in that competition is often around price rather than other points of differentiation.

Some New Zealand meat companies have developed strategic longer-term relationships with their customers. Other smaller New Zealand processors have specifically established and maintained relationships with like-sized international retailers/wholesalers, on the basis that they will be able to maintain a more balanced supplier-purchaser relationship. There is also some limited use of co operative marketing arrangements, such as the New Zealand Lamb Company in North America.





4 MEGA-TRENDS AFFECTING THE SECTOR

Several forecasting and foresight initiatives have been undertaken recently to identify large-scale drivers for change, many of which are particularly relevant to the agricultural sector (Table 4.1). These mega-trends are likely to have wide-ranging and pervasive effects on society.

The MAF (2007) study specifically assessed the strategic risks and opportunities arising for New Zealand's agriculture, food and forestry sectors. Possible opportunities canvassed in the report include sustainability branding, emission mitigation technologies and innovative foods.

TABLE 4.1: LARGE-SCALE DRIVERS FOR CHANGE

FUTURE FOCUS (10-15 YEARS) ¹	TOWARDS 2030 (25 YEARS) ²	FOUR FUTURE SCENARIOS FOR NZ (20-50 YEARS) ³
Demographic shifts	Population dynamics Social inequalities Belief systems and multi- ethnicities	Identity and social cohesion: self-image, basis of association, relatedness through shared culture, social capital
Geopolitical power shifts, and international trade and investment	The global economy	Governance: social and economic rules applied, and degrees of regulation
Global warming, climate change and extreme weather	Climate change	
Ecosystem degradation, and water quality and availability	Water	Resource base and capacity of natural systems to cope with human impacts
Energy cost and supply	Energy	
Technological advances	New knowledge	

Sources

1 MAF (2007).

2 Futures Thinking Aotearoa (2006).

3 Taylor et al (2007).

From these studies and associated literature this report identifies five mega-trends that have direct relevance to the sector:

- › changing demographics and wealth;
- › food, image and beliefs;
- › globalisation;
- › climate change;
- › the increased pressure on the natural resource base.

CHANGING GLOBAL DEMOGRAPHICS AND WEALTH

The world is continuing to experience a substantial change in both demographics and wealth. As the changes become more pervasive, we can expect to see changes throughout the meat value chain, both in determining future markets and the resulting impacts on meat processing and on-farm production.

Over the last decade there have been strong regional differences in global population and income growth (Table 4.2). These trends are expected to continue in the future, although there may be some downward revision given the recent global economic downturn¹⁴. Only Asia has both a high share of income and is forecast to experience strong growth. Europe has a near static population.

TABLE 4.2: GLOBAL POPULATION AND INCOME GROWTH TRENDS AND FORECASTS

	POPULATION			INCOME		
	1997–2006 (% CHANGE ¹)	2007–2016 (% CHANGE ¹)	2006 (MILLION)	1997–2006 (% CHANGE ¹)	2007–2016 (% CHANGE ¹)	2006 (% SHARE)
World	1.23	1.08	6 530	2.86	3.05	100.0
Africa	2.20	2.04	923	4.21	4.32	1.8
Latin America and Caribbean	1.40	1.17	564	2.27	3.79	5.9
North America	1.02	0.86	332	2.81	2.62	32.3
Europe	0.29	0.06	527	2.20	2.13	27.6
Asia	1.15	0.98	4 150	3.55	4.02	30.3
Oceania	1.36	1.08	33	3.33	2.72	2.0

Source: OECD/FAO (2008).

Note

¹ Percentage change is per annum. These forecasts were made before the 2008 global financial crisis, and incomes for each are likely to be revised downwards.

These population and income dynamics are the key drivers of global food consumption, particularly for protein. Over this period overall meat consumption in OECD countries is forecast to remain relatively stable (including beef), with sheep meat consumption continuing to decline. In non-OECD countries, per capita meat consumption is expected to increase by almost 13 percent from 24 kilograms to more than 27 kilograms per capita between the base years of 2005–07 and 2017, although poultry accounts for the largest proportion of this consumption growth (OECD/FAO, 2008).

¹⁴ The International Monetary Fund's March 2009 document *The Implications of the Global Financial Crisis for Low-Income Countries* estimates that advanced countries' economies will contract by 2 percent in 2009, while lower-income countries are projected to grow by 3.25 percent (down from the estimated 6.5 percent in 2008).

Food consumption is changing for a number of reasons ... Consumers want quality, freshness, safety and healthiness.



Photo: Meat & Wool New Zealand.

FOOD, IMAGE AND BELIEFS

Food consumption is changing for a number of reasons. Consumers of premium products are demanding a greater number and variety of product attributes before they pay a premium price (Hughes, 2006). Consumers want quality, freshness, safety and healthiness (Fearne and Hughes, 2000).

The set of core attributes includes food safety, disease-free status and minimum animal welfare requirements. In addition, high-end consumer preferences trends include a shift towards local food, whole food and natural food, sustainably produced foods, seasonal produce and organics. Specific demands will change over time and vary between markets; it is likely that some trends in this list may become less important. What is more clear, however, is that wealthy consumers are increasingly demanding food products that help define their image and that connect with their core beliefs. This presents opportunities in terms of specialised and diversified products, but also presents challenges from an increasingly diverse marketplace.

These trends are at the top end of the market. While global growth will likely shift more consumers into this market, for the majority of consumers, price and value for money will remain the most important considerations when it comes to purchasing food.

GLOBALISATION

Globalisation has led to a substantial increase in the flow of internationally traded goods and finance since the 1970s. Despite recent concerns about the impacts and adverse consequences of globalisation¹⁵, increasing competition from a range of global competitors is likely to be a trend that will dominate over the next 10 to 15 years.

There are two main sources of emerging international competitors:

- › **LOW-COST PRODUCERS:** Until mid-2008, increasing global food prices were attracting a range of new competitors (Oram, 2008). While food prices have since decreased, the drop has not been as substantial as for other commodities (International Monetary Fund, 2009). Additionally, as lower-cost countries improve their reputation for safe and secure supply, New Zealand's meat sector will face significant international competition from a greater variety of sources.

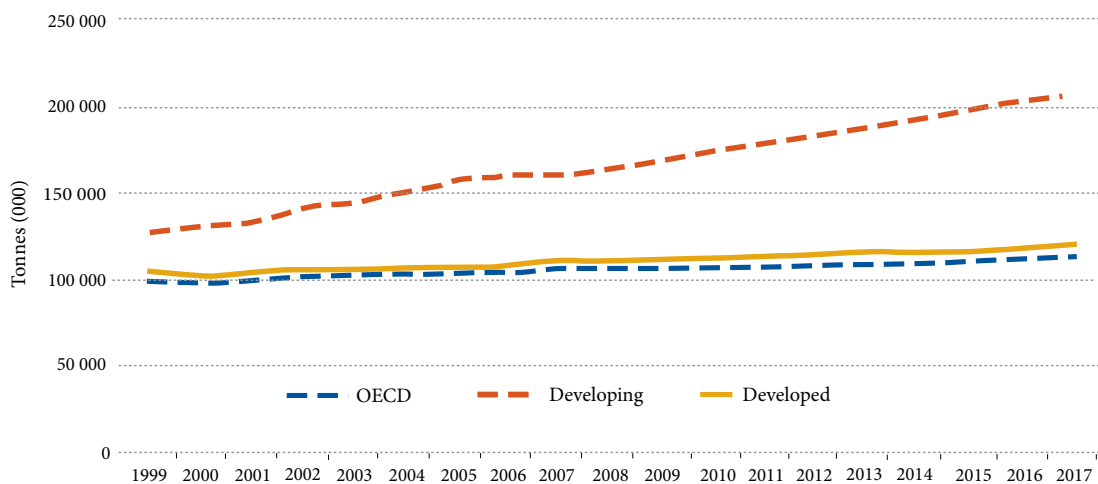
Meat exports out of South America have increased substantially over the last 20 years. In 2007, Brazil was the world's largest exporter of beef (Meat & Wool New Zealand, 2008). Exports of beef from Uruguay have been increasing over the last 10 years, while Argentina's exports have been more erratic due to domestic policy settings that have limited exports. Brazil and Uruguay have invested substantially in improving their meat

¹⁵ The debate on globalisation is usefully summarised in Dani Rodrik's 1997 book *Has Globalization Gone Too Far?* (Institute for International Economics; Washington, DC) and Jagdish Bhagwati's 2004 book *In Defense of Globalization* (Oxford University Press; New York).

industries, for example, in Foot and Mouth Disease vaccination programmes and traceability systems. There is also the potential for increasing competition out of Russia, Eastern Europe and Central Asia. Figure 4.1 shows how the growth in meat production in the developing world is forecast to continue to outstrip that of the developed world over the next 10 years.

- › **LOCAL AND REGIONAL PRODUCERS:** Although production is not increasing as rapidly in the developed world, there is a growing demand in high-end markets for local and regional produce. This stems from concerns about environmental sustainability, a preference for supporting local businesses and concerns over quality and food safety. In some markets, domestic producers have vociferously demanded that retailers support local suppliers (such as Irish and Welsh sheep farmers). Consumer movements have also put pressure on companies to source local products (such as concerns in the US over McDonalds using foreign beef).

FIGURE 4.1: CONTINUED EXPANSION IN WORLD MEAT PRODUCTION



Source: OECD and FAO secretariats.

Internationally, most sheep meat and beef is domestically produced for domestic consumption and governments have strong incentives to protect their domestic producers for both domestic political and wider strategic reasons (such as food security). Future multilateral trade talks may possibly substantially reduce the level of trade barriers facing agricultural products. While this would generally be good for New Zealand, the meat sector would likely face stiffer international competition in markets such as Europe and the

There is much uncertainty over the international response to agricultural emissions and what impact this may have on New Zealand's sheep and beef sector.

US, where it currently receives advantageous quota market access compared with some of its competitors.

The next 10 to 15 years are likely to see a continued increase in the internationalisation of meat processing companies. For example, Brazil's JBS has recently expanded into the US and Australia and is now the largest meat processor in the world. Companies such as JBS are able to drive efficiencies through economies of scale, although most of its operations centre around processing feedstock animals. The possibility of substantial overseas investment in New Zealand's meat industry over the next 10 to 15 years cannot be ruled out.

CLIMATE CHANGE

Climate change is now a mainstream part of public debate and public policy discourse nationally and internationally. It is a driver for change in production and is shaping market expectations.

While climate change is a pressing issue for the sector, this report does not directly discuss issues of greenhouse gas mitigation, the pricing of agricultural emissions and how these may impact on the sector. These are clearly important issues, but there is much uncertainty over the international response to agricultural emissions and what impact this may have on New Zealand's sheep and beef sector. We have therefore deliberately excluded many of these issues and concentrate on on-farm adaptation and changing consumer preferences.

Although climate change is a global phenomenon, impacts and likely mitigation measures vary at the regional scale. Recent modelling of climate change impacts in New Zealand suggests a range of regional-level impacts on the sheep meat and beef industry in the coming years (Ecoclimate, 2008). The model indicates less rainfall along



There are already growing demands throughout the value chain for the credible verification of environmental performance.

the east coast and increased rainfall in the west and south. Extreme conditions are predicted to be much more severe and occur at greater frequency than at present. The frequency of extreme events may well become a limiting factor in agricultural production and on the ability of farmers to plan and commit to longer-term supply.

While some adverse events, such as droughts, may potentially be mitigated by increased irrigation, irrigated land is more likely to be used in other sectors that have higher returns per hectare.

This could all equate to further destocking of extensive pastoral land to manage the extra feed availability risk in drier years. If farmers, on average, are able to grow less pasture due to less favourable growing conditions, then they will require a lower stocking rate. An alternative would be the increased use of supplementary feed. If this was feasible on a cost-returns basis it would be a distinct possibility for the beef sector, but it would likely pose significant practical issues for the sheep sector (due to, for example, the difficulties of feeding out to sheep in hill country and the high country).

Save for the possibility of tipping point climate events, the onset of climate change is likely to be gradual over a sustained period of time. Adaptation and productivity growth will be important contributors to the sector's resilience and competitiveness in the face of a climate that is likely to exacerbate the risks associated with pastoral farming.

PRESSURE ON THE NATURAL RESOURCE BASE

New Zealand's pastoral agri-system operates within the constraints of a biophysical environment. Expansion and intensification of farming puts pressure on the natural resource base. These pressures are revealed to the productive system through impacts such as soil degradation and erosion. This may constrain the future productive capacity of the sector, and its ability to substantially expand within New Zealand.

Societal and cultural expectations for improved environmental performance from the agricultural sector are heightening (with respect to, for example, water, nutrient and waste discharges, and greenhouse gas emissions). Society is increasingly expecting the agricultural sector to pay for the negative externalities that it is creating.

Food markets are shifting ... The sheep meat and beef sector has a range of new opportunities in both value and volume markets.



In the next 10 to 15 years, the sheep meat and beef sector will probably need to be able to verify improved environmental performance both to meet market requirements and to satisfy domestic and perhaps international environmental regulations. There are already growing demands throughout the value chain for the credible verification of environmental performance. For instance, some overseas retailers are increasingly demanding information from processors and producers in order to determine products' life-cycle carbon footprints.

Water quality and quantity issues are particularly coming to the fore, with predictions of future international conflicts being precipitated by water shortages. Energy costs and supply are also likely to be an important future issue for the sector, with the potential for small-scale renewable energy generation providing a possible hedge for both farmers and processors.

IMPLICATIONS OF TRENDS ON CURRENT SYSTEM

Food markets are shifting. Longer-term demographic and global economic trends are creating new, wealthier markets. Demand is becoming increasingly fragmented and diverse. The sheep meat and beef sector has a range of new opportunities in both value and volume markets.

The combination of these trends is not only changing demand preferences and market requirements, but also the way the value chain operates and how players along that value chain interact with each other. Some consumers are requiring more specific attributes and these requirements are being communicated back through the value chain to producers, such as through the private standards of major retail chains in the UK.

An example of this is the airtime that the recent "food miles" debate has received. The concept of food miles (measuring a product's environmental credentials based on the amount of miles it has travelled) has been widely discredited. Such a simple concept may still, however, resonate in many consumers' minds. Methods for certifying product attributes are now becoming much more sophisticated and rigorous, such as through the application of life-cycle analysis in order to determine a product's "carbon footprint". Yet, how these are applied is still a developing area.

Certification and verification is more than just measuring greenhouse gases. It is about communicating a story of how a product meets consumers' needs and is consistent with consumer beliefs – whether this be food safety, animal welfare, environmental sustainability or wider social and ethical considerations.

Improving product credentials and being able to effectively communicate them to consumers may be a potential source of ongoing competitive advantage for the sector.

Domestically, our natural resource base is coming under pressure. Societal and cultural expectations are changing with respect to issues such as climate change and water, nutrient and waste discharges. The sector's economic success is likely to increasingly depend on its environmental performance, ensuring that the natural resource base is sustained and consumer demands for environmental assurances are met.

As well as displaying verifiable credentials in areas such as improved environmental performance, the sector faces the realities of adapting to increasing environmental constraints. Constraints will be both physical – in terms of increasingly severe weather events and limitations and costs on access to water and energy – and institutional – by way of tighter environmental regulatory controls and/or consumer-driven standards.

Improving product credentials and being able to effectively communicate them to consumers may be a potential source of ongoing competitive advantage for the sector and a way to stay ahead of international competitors in an increasingly globalised world.



5 SCENARIOS FOR 2023

Four main scenarios are developed to enable discussion on various possibilities for the meat industry in 10 to 15 years.

This section draws on material from the Delphi survey, observations from the current meat industry, and the key mega-trends to inform future sheep meat and beef sector scenarios. The purpose of this section is not to predict the future of the sector. It aims to encourage debate and inform decision-making by highlighting strategic issues and challenges facing the sector.

Scenario planning is based on four assumptions:

- › The future is unlike the past, and is significantly shaped by human choice and action.
- › The future cannot be foreseen, but exploring the future can inform present decisions.
- › There are many possible futures; scenarios therefore map within a “possibility space”.
- › Scenario development involves both rational analysis and creative thinking (Department of Trade and Industry (UK), 2003).

Part of the value of this approach is that there is wide agreement that some changes within New Zealand’s sheep meat and beef sector are likely to occur. Opinions on other factors differ significantly. The possible trajectories of these factors may have profound consequences for the sector. Rather than attempt to seek consensus, the scenario approach allows these differences to be highlighted to provide a starting point for discussion.

Four main scenarios are developed to enable discussion on various possibilities for the meat industry in 10 to 15 years. The first, a bleaker scenario, outlines a possible future where the sector does not adapt to evolving opportunities and challenges. The three further scenarios describe a variety of other futures where the sector variously adapts to the opportunities and challenges in front of it.



There are, of course, a multitude of other scenarios that could have been developed. Instead, the report concentrates on just four, which were chosen on the basis of the factors identified in the Delphi survey as the most important but uncertain strategic issues. The opportunities and challenges facing the sector are, of course, not limited to those included below.

This report does not intend to present solutions for the industry, nor does it presume that it is possible to compartmentalise the sector's opportunities and challenges so easily. It is hoped, however, that these scenarios will provide food for thought and generate discussion and debate (and disagreement) among the industry.

POTENTIAL QUESTIONS ARISING FROM THE SCENARIOS

- › How likely is this scenario?
- › What challenges does this scenario present to the sector? What opportunities?
- › What actions could the sector take to help ensure this scenario does/does not occur?
- › What actions could MAF and the government take to help ensure this scenario does/does not occur?

These scenarios may be a useful planning tool for the sector and will raise various questions depending on the individual interests of the sector participants. Above are some general questions that the scenarios may raise, while other specific questions are included at the end of each scenario.

THE OPERATING CONTEXT FOR ALL SCENARIOS

A core set of assumptions has been identified from the first half of this report (Table 5.1) where likely changes have generally been agreed on. The assumptions include:

- › The factors identified by Delphi respondents as important and in which they had high confidence that a desired outcome would be achieved.
- › Implications from some of the key mega-trends adapted for the meat sector, including the need for improved environmental performance. Respondents from the Delphi survey generally agreed that improved environmental performance was highly likely.

These core assumptions form the operating context of the four scenarios. While none of these changes are assured to happen, this section assumes that they will occur. This enables an exploration of what the future may look like. Some of these assumed changes occur to a lesser extent in the first scenario.

TABLE 5.1: CORE SET OF ASSUMPTIONS

Changing demographics, increased wealth in developing countries
Increased international competition and increased product supply from other countries
Market expectations putting greater emphasis on climate change and environmental sustainability
Increased use of “New Zealand” in branding
Improved producer and processor efficiency, including improved labour efficiency
Greater use of forward supply contracts between farmers and processors
Improved on-farm environmental performance
Increased average farm size and higher average land prices

The assumed operating context, based on this core set of assumptions, includes the following.

GLOBAL CONDITIONS

An economic system in 2023 largely similar to that of early 2008, without any ongoing impact from the 2008 financial crisis and subsequent economic downturn or any other major international or domestic shocks. Climate change impacts are becoming apparent, but largely reflect an exacerbation of existing extreme events rather than tipping point changes.

World demand for meat protein has continued to grow as developing countries have become richer. Sheep meat remains a small part of total meat consumption. World sheep meat and beef prices continue to demonstrate cyclical demand and supply patterns. The New Zealand dollar also continues to fluctuate.

INTERNATIONAL COMPETITORS

Competition in core markets increases, especially from temperate South American producers. International competitors increasingly adopt New Zealand-type pastoral-farming technology and methods, but have lower labour and capital input costs.

MARKETS AND CONSUMER PREFERENCES

Exporters face a range of marketing challenges. Sheep meat consumer demographics have changed in core markets. Traditional “Sunday roast” consumers are declining in number. Younger consumers have less loyalty to “New Zealand lamb”, prefer convenience foods and eat out more than older consumers. In an increasingly affluent world, lamb is marketed more and more as a premium meat in rapidly developing markets.



In developing Asian markets, target consumers' disposable income levels increase and this increases the demand for premium meat products significantly. Food safety and supply certainty are among the key attributes demanded. Urbanisation drives growth in the food service industry and thereby increases demand for safe, quality manufacturing beef.

Many product attribute standards are now prerequisites for trading and do not attract any price premium. Food safety, traceability and animal welfare, as well as farm conservation and wildlife management plans, are now standard qualifying requirements for sales to European supermarkets but remain an intrinsic competitive advantage for New Zealand. Also, meeting EU water quality and efficiency standard equivalents are increasingly become prerequisites for entry into the top-end European markets.

FORWARD SUPPLY CONTACTS

Forward supply contracts become the increasingly preferred supply arrangement between farmers and processors. This enables greater certainty of supply for processors. Suppliers and processors work closer together – forward contracts are not just about committing to supply in a certain period, but are also related to the qualities inherent in the slaughter stock. Farmers are willing to commit more supply to forward supply contracts as they are adequately compensated for higher levels of risks, for example, where adverse weather conditions preclude them from profitably fulfilling their supply contracts.

EFFICIENCY IMPROVEMENTS

On-farm production and processing level efficiency gains enable a greater amount of output from fewer inputs. These efficiency gains are made in a number of ways, but in particular through the increasing adoption of current technologies and innovations, ensuring more of the industry is now undertaking “best practice”.

FARM ENVIRONMENTAL PERFORMANCE

Environmental management controls, either through regulation or to meet market requirements, are widely applied across the sector. On-farm environmental performance remains a competitive advantage for New Zealand sourced meat. Farmers can demonstrate carbon neutrality. Water abstraction for irrigation will be more tightly managed and this may impact on the viability of producers in some areas, as well as the viability of other land uses. Increased storage of water, however, will increase the potential growing season in some

areas, provide for a greater variety of land-use options and reduce the impact of climatic risk.

LAND USE AND FARM MANAGEMENT

On-farm productivity improvements partially offset any reduction in sheep numbers. There is a trend towards a drier east coast and more extreme weather events are occurring. Farms tend to be more extensive than previously, as lower stocking rates are important to provide farms with a buffer for coping with increased impact and frequency of droughts while adhering to supply contracts.

Ownership patterns have changed. Larger farms and larger multi-farm enterprises are now much more common. These larger enterprises have a range of ownership models, including complex partnership arrangements and corporate-type business structures. Larger enterprises may have some advantages in terms of economies of scale and diversity of land type.

Some individual farms are more specialised, concentrating on one part of the production process. This requires greater co-ordination between farms. Larger farming entities may have an advantage if they can specialise within the one firm structure and therefore reduce transaction costs.

On the other hand, “family” farms remain a core part of the industry. They continue to have certain advantages in management oversight and performance incentives. Family farms also prove more resilient during periods of poor returns due to a greater ability to reduce drawings and general farm expenses. Smaller family farms that do not expand are likely to rely more on off-farm income. Increased availability of broadband in rural areas will increase opportunities for alternative rural-based employment opportunities.

DIFFERING OPINIONS, DIVERGING SCENARIOS

The operating context forms the basis of the four scenarios. Other changes are less certain to occur, but may still have a major impact on the sheep meat and beef sector's future.

The first scenario describes an industry where the failure to address key opportunities and challenges leads to a substantial reduction in the sector's size and scope. Profits not only retain their cyclical variations, but become systemically lower. This scenario paints a bleak future for the sector; it describes a situation where current negative trends are extrapolated into the future and where the sector fails to adapt to changing circumstances.



The sector, of course, has great scope to adapt to meet opportunities and challenges. The remaining three scenarios describe various futures where the sector has, to varying degrees, managed to capitalise on different opportunities and has met certain challenges. These three scenarios are predominantly differentiated using the following variables:

- › innovation investment;
- › reliance on developing new markets;
- › marketing expenditure and operation, including:
 - total expenditure spent on marketing;
 - co-operation between New Zealand companies in international marketing;
 - New Zealand ownership or control of distribution and marketing networks;
- › on-farm changes.

In respect to on-farm changes, farmers' ability to profitably adapt to meet certain future opportunities will depend on a number of factors:

- › How will farmers react to the changing incentives offered by processors?
- › How do farmers value the relative "freedom" of supplying stock on the spot market rather than through longer-term contracts?
- › To what extent will farmers be prepared to commit to supply contracts that specify particular product attributes?
- › How will other factors (such as the possibilities of a significantly smaller sector, increased incidence of adverse weather events and market requirements for higher environmental standards) affect the overall performance and resilience of sheep and beef farming?

On-farm adaptability will be driven in part by regional geographic variations (some regions will be more easily able to spread their supply season). Advances in and adoption of new technologies and farm practices will also enable farmers to adjust their production systems.



SCENARIO ONE: Slippery slope

MARKET	<ul style="list-style-type: none"> › Inability to credibly meet more stringent consumer requirements in areas such as environmental performance › Inability to compete on price with lower-cost exporting countries
PROCESSORS/EXPORTERS	<ul style="list-style-type: none"> › Continual decline in the total numbers of livestock leads to ongoing overcapacity in the processing sector › Processors compete vigorously for stock on the spot market – perpetuating low profit margins › Inability for processors to make new investments due to low profit levels and capital constraints
ON-FARM	<ul style="list-style-type: none"> › Continual decline in size of sheep and beef farming sector › Natural resource constraints increase the costs to farming › Sheep and beef farming has reduced profitability compared with other land uses › Ongoing low profitability leads to reduced resilience – every adverse weather event sees further mass destocking across the sector

**DECLINE IN
TOTAL STOCK
NUMBERS**

Consumers in wealthy markets continue to demand more attributes from their food. The New Zealand sheep meat and beef sector becomes increasingly marginalised from this market due to its inability to credibly meet these increased requirements. This is due to a combination of:

- › wealthy consumers preferring locally sourced food;
- › local producers in our main export markets increasing their abilities to deliver on specific customer requirements;
- › the New Zealand sector being unable to either:
 - improve its environmental performance; or
 - effectively communicate its improved environmental performance.

Any improvements in environmental performance are not enough to redress overseas consumers' concerns regarding the consumption of New Zealand meat, including concern over distance travelled by products. Improving environmental performance also costs money: without a focused effort to credibly verify environmental performance, consumers switch to products with more validated attributes.

New Zealand sheep meat and beef also becomes increasingly marginalised in volume markets. This is due to a combination of:

- › competitors in low-cost countries vastly ramping up their production and export potential;
- › improvements in international competitors' market access arrangements and food safety reputation;
- › New Zealand's increasing cost structures reducing the sector's ability to compete on price, even given some incremental efficiency improvements.



The sector becomes stuck in the middle and is neither able to effectively compete at the top end in premium markets nor compete on price in value markets. The sector fails to come up with a co-ordinated response to redress the decline.

Spot relationships continue to dominate between farmers and processors. Use of forward supply contracts has increased, but their use is sporadic and the contracts are, for varying reasons, not always fulfilled.

A continual decline in livestock numbers perpetuates overcapacity in the processing sector – there is a lag between a reduction in livestock numbers and a reduction in processing capacity. Processors compete vigorously on the spot market to ensure they maintain sufficient throughput. This excessive competition reduces processors' profitability and they are unable to make significant new investments due to low profits and capital constraints.

Overall returns to sheep and beef farming continue to fluctuate, but returns are clearly in systemic decline. The sector's ability to compete with other land uses is reduced. Land suitable for dairying goes to dairying or dairy support. Land suitable for forestry goes into trees. The sheep and beef sector is left with a much smaller geographic footprint and a greater reliance on extensive hill country farms.

Also impacting on resilience are the sector's reduced scale and scope, as well as fewer, smaller "good time" profits to sustain firms through the bad times. During each drought or adverse weather event the sector destocks further and does not bounce back to its previous levels.

QUESTIONS ARISING FROM SCENARIO ONE

- › What actions are required in response to declining production? Where will meat production be centred in this scenario's future?
- › How could processors/exporters further strengthen their relationships with both customers and producers?
- › How can farmers strengthen their relationships with processors?
- › What does improved on-farm environmental performance look like? What needs to be done to ensure this is a future competitive advantage for the sector?

SCENARIO TWO: A new market orientation

MARKET	<ul style="list-style-type: none"> › Substantial investment into new markets › Less dependence on traditional markets › A variety of marketing arrangements are used, including co-operation between companies in international marketing › Processors have invested in marketing and distribution channels
PROCESSORS/EXPORTERS	<ul style="list-style-type: none"> › Greater processing economies of scale are evident › Some successful consolidation of larger processors › Important role of innovative small processors
ON-FARM	<ul style="list-style-type: none"> › Farmers have responded to price incentives and now supply livestock more evenly throughout the year › There is greater use of longer-term supply contracts › The on-farm sector has maintained its size and scope

A cyclical upswing in commodity prices and a weakening of the dollar temporarily increases returns and profitability across the meat industry. The sector takes advantage of this window of opportunity by investing in developing new markets. Making progress in these new markets does not come cheap; a step-change in its marketing expenditure is required.

These investments start to bear fruit:

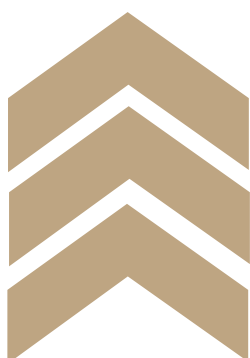
- › Asia, the Middle East and North Africa form a significantly greater proportion of total exports.
- › Traditional markets remain important; it is predominantly the cash flow from these markets that has provided the cash flow to sustain continued investment in new markets.

A greater proportion of exports are sold via marketing arrangements that involve a higher level of co-operation between New Zealand companies. This particularly helps establish a greater market share in Asia. This higher level of co-operation between New Zealand companies in international marketing is focused on building New Zealand brand recognition. The “New Zealand story” is successfully communicated to a significant proportion of wealthy consumers in developing markets.

WHY DID THE SECTOR MOVE TOWARDS DEVELOPING NEW MARKETS?

- › Returns in new markets are at least as good as current markets
- › More growth potential in developing markets
- › Diversifying risk – less dependent on quota markets
- › Traditional markets are demanding more specific attributes – returns from new markets are based on current New Zealand competitive advantages (food safety, certainty of supply, environmental reputation)

FOCUS ON NEW MARKETS



FORWARD SUPPLY CONTRACTS



A higher proportion of New Zealand ownership and control of marketing and distributional channels reduces the number of layers in the value chain. Firms capture a greater share of the value created by controlling a greater proportion of the value chain.

New markets require more year-round supply as these markets do not have domestic industries that complement New Zealand's natural seasonal production. Processors/exporters are able to source year-round supply to serve these new markets, while the seasonal peak (albeit reduced) continues to complement domestic supply in traditional northern hemisphere markets.

Processors/exporters secure an increasing proportion of stock using forward contracts and longer-term supply agreements. Forward contracts allow for:

- › greater certainty of supply for processors;
- › the provision of more complex incentives in terms of product attributes.

Farmers produce flatter average supply curves compared with the current situation. Larger facilities and companies are now more cost effective, enabling the big processors to become more profitable and efficient compared with some of the smaller facilities.

WHAT HAS DRIVEN CONSOLIDATION AT THE PROCESSOR LEVEL?

- › Processors have more certain supply because of the increased use of longer-term supply contracts and flatter seasonal supply curves.
- › Capital invested in processing capacity is therefore used more efficiently as it is left idle for shorter periods of time.
- › Capital-intensive processing facilities have an improved competitive advantage, increasing the incentive for large-scale investment into and adoption of new technologies.
- › These new economies of scale benefit large facilities and companies – the realisation of such economies of scale provides for successful processor consolidation through mergers or acquisitions.

The role of the smaller processors, however, remains important. Indeed, in many ways the smaller processors have been instrumental in opening up new markets through their ability to niche market premium products and thus build up the image of New Zealand meat in new markets.

Increased market returns coupled with more effective use of processing capacity enable processors to pay farmers sufficient premiums to more than offset farmers' increased costs of out-of-season supply.

YEAR-ROUND SUPPLY



Farmers adjust farm management practices and supply patterns in response to economic incentives provided by processors. Pushing supply out into the shoulder seasons increases costs and risks to farmers. Some farmers and regions are better able to respond to these new pricing incentives.

WHAT ARE THE ON-FARM CHALLENGES OF LONGER-TERM COMMITMENTS AND YEAR-ROUND SUPPLY?

- › Improving on-farm profitability means sheep and beef can compete with dairy for the use of relatively flat finishing land – this mitigates some of the feed risk faced by hill country farmers.
- › Some farmers switch to a lower stocking rate; they are able to achieve higher net returns from “fewer but better” animals. A reduced carbon footprint from lower stocking rates adds to this financial incentive.
- › Processors and farmers work closer together – farmers minimise their financial risks from adverse weather events that would prevent them profitably meeting forward supply commitments. This includes the use of insurance.
- › Ongoing innovation and adoption of new technologies and farm management practices gives farmers a greater degree of certainty when planning ahead. The confidence that forward contracts gives farmers also means they are able to undertake medium-term investments with greater certainty.

Other farmers struggle to rearrange their supply profiles due to, for example, geographic or climate constraints. These farmers continue to supply according to their traditional supply profiles. However, these suppliers also benefit from processors facing less capacity pressure at the height of the season.

By maintaining its profitability relative to other land uses, sheep and beef farming is able to retain its scale and scope. This critical mass enables continual efficiency gains through ongoing investment in on-farm industry-good innovation.

QUESTIONS ARISING FROM SCENARIO TWO

- › Does the development of new markets present a real opportunity to the sector? If so, what actions are required from the sector to reduce its reliance on traditional markets? What are the limiting factors that may prevent this?
- › What are the options for securing the year-round supply of product required to service new markets?
- › What are the challenges of year-round supply?
- › What can be done to increase farmer uptake of forward supply contracts?

MARKET
PROCESSORS/EXPORTERS
ON-FARM

- › Exports continue to predominantly go to traditional European and North American markets
- › Supply into these markets is predominantly based around New Zealand’s natural seasonal variations
- › However, products become more specialised with specific attributes such as environmental credentials or shelf-stable variants
- › The processing industry continues to make efficiency gains
- › There has not been large-scale amalgamation of processors – there remains a number of diverse processing firms, although some downsize or exit the industry
- › Co-operatives remain a core part of the processing industry
- › Reduction and stabilisation in size of sheep and beef farming sector
- › Returns increase for those who remain due to reduced supply
- › Improved on-farm environmental performance is the main source of competitive advantage

DECREASED BUT
STABILISED SHEEP
NUMBERS



SCENARIO THREE: Shrink-to-fit

Changing land use is driven by relative profitability in certain industries, leading to the national sheep flock reducing and stabilising at 32 million animals. Some hill country has been retired or planted in forestry as carbon-farming. More quality finishing country has been taken over by the dairy industry, either as dairy conversion or dairy support.

While the national prime beef herd has decreased in size, the national dairy herd continues to grow, with a resulting increase in the number of cull animals delivered to the meat sector. Further, the widespread use of sexed semen and other breeding technologies in the dairy industry significantly reduces the number of matings needed to breed dairy replacements. As a result there is an increase in the number of high-quality, beef-sired “bobby” calves available to the sector for use as veal or to be grown on as prime beef or crossbred breeding cows for the beef industry.

Europe and North America remain the dominant markets for New Zealand’s sheep meat and beef exports. While there is general agreement on the desirability of developing new markets, the reduced lamb and prime beef kill refocuses exporters on better serving traditional markets rather than seeking to supply large additional quantities to new markets.

WHY DID THE SIZE OF THE SECTOR REDUCE SIGNIFICANTLY?

- › Sheep and beef farming have, on average, been less profitable than other land uses over the interim 10 to 15 years.
- › Conversions to dairy and dairy support continued to take place, especially in the South Island.
- › Lack of finishing land and more dependence on extensive farms has meant a lower average stocking rate on hill country farms to better deal with feed and seasonal risk.
- › Improving returns from forestry, including an increase in “carbon farming”, has meant that substantial areas of marginal sheep and beef country have gone into trees.
- › Small pockets of farming land have also been lost to urban encroachment and lifestyle blocks.
- › While the reduction in size has been substantial over the intervening years, the size of the sector has stabilised as reduced supply of New Zealand prime beef and lamb has led to higher average farm-gate prices.

Products become more specialised and customers demand a greater number of attributes. New Zealand is able to maintain market share and grow brand prominence in traditional markets through the following:

- › **IMPROVEMENTS IN, AND VALIDATION OF, ON-FARM ENVIRONMENTAL PERFORMANCE:** This does not come at a price premium. Such attributes are now minimum market requirements and need to be met to ensure the sector’s products stay on the shelves.
- › **ONGOING PRODUCTION AND PROCESSING EFFICIENCY GAINS:** Achieved through a combination of:
 - collaborative research and development;
 - individual investment into, and adoption of, new technologies.
- › **ONGOING CONFIDENCE IN NEW ZEALAND’S FOOD SAFETY AND DISEASE-FREE STATUS:** New Zealand maintains its reputation as a safe and secure supply source. Any major incursions are quickly contained and controlled – thus minimising longer-term negative impacts on New Zealand exports.

Many farmers and processors exit the industry. This reduces the scale of the industry, but increases returns to remaining participants. Although average profitability has increased, profits continue to show large fluctuations, exacerbated by dependence on only a few markets.

The overall capacity in the processing sector decreases in response to reduced stock numbers. As reductions in national stock numbers impact on some regions more heavily than others, processing adjustments take place in greater proportion in the south and east of the South Island. The same regions that are impacted most heavily by the reduction of total hectares in sheep and beef farming also display the highest growth in dairy, with a resulting higher number of dairy cull cows.

There has not been large-scale amalgamation at the processing level, as increased



economies of scale are not able to be realised. Many smaller processors continue to outperform some of the larger processors. Large processors, either directly or indirectly, continue to provide primarily to large supermarket chains and the food service industry. Smaller companies primarily niche market their products at the premium end of the market.

Co-operatives remain a core part of the industry. During cyclical downturns in the industry, co-operatives retain their patronage-value to shareholders (as opposed to investment-value) and thus co-operatives are better able to cope with periods of low profitability.

The use of forward supply contracts increases compared with today, although supply is still dominated by natural seasonal variations. Fluctuating supply means that processors with flexible facilities, low overheads and nimble resources maintain a competitive advantage in the domestic processing industry.

Supplying seasonal fresh product into traditional markets continues to complement domestic production in those countries. This enables farmers to continue to maximise the use of grass as the cheapest form of feed, although this comes at the cost of idle processing capacity in off-peak times. The reduced size and scope of the sheep and beef farming sector, and the increased prevalence of extreme weather events, means that the risk/costs of supplying out-of-season is generally too great compared with the extra returns farmers would receive.

QUESTIONS ARISING FROM SCENARIO THREE

- › How will the sector respond to declining production? Where will meat production be centred in the future?
- › What are the risks of concentrating on a few core quota-supported markets?
- › What's the relative importance of processor structure versus processor strategy in determining the on-farm returns? Why is that?

SCENARIO FOUR: The knowledge industry

MARKET	<ul style="list-style-type: none"> › There are a number of strategic partnerships between processors and international customers › The sector is producing a variety of new and differentiated products, possibly in collaboration with other food producers › These products are specifically tailored to customers' requirements
PROCESSORS/EXPORTERS	<ul style="list-style-type: none"> › A step-change has occurred in the amount of innovation investment › Processors are more diverse in the offerings they provide › Co-operative processors' capital structures have evolved to enable them to achieve greater access to capital › Increased innovation investment has led to increased capabilities and intellectual property, allowing greater internationalisation and outward investment from the meat sector and related industries
ON-FARM	<ul style="list-style-type: none"> › Farmer-shareholders receive sufficient returns from investing in their co-operative processors to encourage the higher levels of investment needed for increased research and development expenditure › Farmers generally work together with processors to meet specific customer requirements › Farmers receive suitable financial incentives to meet such requirements

The sector makes a step-change in its levels of innovation investment. The sector focuses on meeting and responding to the specific requirements of individual customers. Increased innovation investment leads to:

- › new product innovations;
- › new processing innovations;
- › the increased adoption of new and existing technologies.

The sector is thus better able to deliver what the markets want and produce a greater array of value-added products. Processing plants use a higher level of robotics and are very flexible, able to adapt quickly to different throughput and different cuts and packaging to respond to market needs. Processing plants can also better cope with variations in stock numbers.

Improved labour efficiency is achieved through investment in human capability. Increased use of robotics provides a greater number of higher-skilled jobs, while at the same time reducing the total labour requirements in the processing industry. Seasonal labour requirements are reduced, and these relatively capital-intensive plants allow higher throughput and greater throughput flexibility. While the installation and use of these plants varies across companies, older obsolete plants are increasingly being decommissioned.



WHAT DROVE THE SECTOR'S INCREASED INNOVATION INVESTMENT?

- › The sector has invested heavily in human capability. The attraction and retention of high-quality staff has driven the move to a more innovative industry.
- › The sector recognised that competing on cost is not a viable strategy in the long-term and therefore it needs to create more value in the products it produces.
- › Innovation investment has led to increasingly differentiated products, reducing the need to compete on price alone.
- › Critically the sector determined that the additional value could be created that is at least equal to any additional costs incurred by the sector from creating such differentiated products.
- › Opportunities were identified in product development and processing innovation.
- › Advances in these areas have allowed the sheep meat and beef sector to better serve existing markets with improved product, as well as opening up new markets and creating new demand for a variety of different products.

The sector has embarked on a number of strategic partnerships with its international client base. This requires lower capital investment compared with the option of increasing ownership and control of marketing and distribution channels.

These strategic partnerships are important for two crucial reasons:

- › Partners are able to share high-quality market and consumer information with processors and exporters, who in turn translate these into exacting supply incentives for farmers.
- › The greater certainty and long-term incentives provided by these partnerships enable processors to invest significantly in product development and processing innovation.

The structure of the industry has changed markedly:

- › There are still multiple large New Zealand owned processing companies.
- › Some of the larger processors have started to procure and process a significant proportion of their stock offshore.
- › Some smaller processors have gone on to become world leaders in food derivatives.

Some processors are making substantial returns from leveraging the intellectual property they have developed in processing technologies.



INNOVATION INVESTMENT



HOW HAS THIS AFFECTED THE STRUCTURE OF THE INDUSTRY?

- › Innovation investment leads to more differentiation at the processing level. Processors compete less directly on price than at present, because they are producing different products, for different customers, in different markets.
- › Some of the larger processors have the critical mass to achieve scale economies in research and development – this has led to some industry consolidation.
- › However, as processors are increasingly differentiated, the rationale for an industry-wide merger has lessened. Large processors are predominantly pursuing different strategies and as such there are few synergy or scale advantage benefits from an industry-wide merger.
- › Processing improvements driven by investment in research and development have improved the sector's international competitiveness. Processors are therefore able to profitably procure and process stock offshore as well as domestically.
- › Much of the research and development investment has been undertaken by larger firms due to their scale advantages, but smaller nimble firms have also benefited from collaborative research and development, open innovation and by partnering with international clients.

Procurement models change. Farmers and processors/exporters work together to meet certain specifications and timetables driven by the market. There is greater long-term commitment between farmers and processor – they work together to grow the value of the product.

Meat processors in general require greater amounts of capital to make new investments. Co-operative processors, in particular, adapt their capital structures to enable them greater access to capital. One of the ways in which this is done is by providing greater incentives for farmer-shareholders to invest in co-operatives. Thus over time more capital becomes available for co-operatives to invest in innovation.

These incentives are created by moving away from nominal shares toward a market or proxy-market valued share structure (that is, shares whose prices move up or down depending on the performance of the co-operative). Co-operative investment returns are disentangled from returns for supplying the co-operative, allowing farmers to see the returns that their investment is making. Depending on the performance of the co-operative, farmer-shareholders get returns through a combination of dividends on their investment and the capital appreciation in the share price. Farmers' short-term behaviour is reduced and they become more committed to the long-term profitability and performance of their co-operative. There is less pressure for higher short-term distributions to farmer-shareholders and greater acceptance of retention of profits for reinvestment, as any increase in the co-operative's equity position is reflected back into the farmer-shareholder's balance sheet.

Market or proxy-market valued shares result in increased pressure on co-operatives' investments to perform. Critically, while market or proxy-market valued shares provide a mechanism in which farmers can be incentivised to increase investments in their co-operatives, farmers will be unwilling to invest more in their co-operatives unless the returns are at least equal to that of alternative investment options – for farmers this will usually be investment on-farm.

There is some mismatch between processing capacity and stock numbers, apparent when adverse climatic conditions and drought force farmers to reduce numbers. However, a combination of forward contracts and new, small and efficient processing plants allow greater flexibility than before to address demand.

Beef gains in market size as a consequence of smart breeding programmes, with dairy farmers now selecting for meat when breeding a proportion of their herd. This has resulted in increased quantities of quality beef that find niche markets. This development is driven in part by the stabilisation of the dairying sector, so that herd replacement rather than growth is required. Genomic selection will likely increase the feed conversion efficiency and health of sheep and beef (making it more cost competitive with chicken and pork – both pigs and poultry will also become higher cost as a result of animal welfare controls).

WHY DID A STRATEGY OF INCREASED INNOVATION INVESTMENT LEAD TO GREATER INTERNATIONALISATION?

- › The New Zealand sheep meat and beef sector is able to stay ahead of the game internationally.
- › The intellectual property and capabilities developed through investing in innovation have given the sector an added competitive advantage that the meat industry can employ offshore.
- › Investment in human capability provides the sector with the high-calibre people who are able to successfully implement internationalisation strategies.
- › Higher-value products, produced as a result of innovation investment and strategic partnerships, increase returns and provide the meat sector with the capital to invest significantly offshore.

An increased level of innovation investment keeps New Zealand's sheep meat and beef sector ahead of its international rivals. The sector is thus able to increase its offshore investment and international connectedness. Some companies develop relationships with farms and processors in Uruguay and Mongolia to provide year-round supply. Others have supply partners in Europe,

used to complement New Zealand seasonal supply, provide logistical advantages and avoid consumer concerns about fair-trade and regional sourcing. New Zealand farmers also invest directly in overseas farm ownership. Complementary capabilities in areas such as environmental solutions are internationalised and applied to offshore pastoral farming systems.

Internationalisation does not just take place among the incumbents – it also takes place by various spin-offs and start-ups, in both the meat sector and related industries.

QUESTIONS ARISING FROM SCENARIO FOUR

- › What role can strategic relationships with international customers play in the ongoing success of the sector? What are the risks?
- › How can the incentives for innovation investment be altered to better enable the sector to invest in its future? What are the key areas that would benefit from such an increase in investment?
- › What would be required to enable sheep and beef farmers and/or processors to invest successfully in offshore farm and/or processing ownership? What are the risks?

SUMMARY OF THE SCENARIOS

We envision that these scenarios may be a useful planning tool for the sector and that they will raise various questions depending on the individual interests of the sector participants.

The scenarios developed necessarily polarise the challenges and opportunities that may face the sector over the next 10 to 15 years. This has allowed us to concentrate on a subset of those opportunities and challenges, and to consider the follow-on implications of the sector's potential response to these. Again it is important to note that scenarios are not predictions; they are simply a way of exploring possible future paths for the sector. In reality, the future will likely be wildly different from these scenarios, but this does not preclude their usefulness.

What is apparent from the scenario analysis is that, wherever there is an opportunity, there are challenges, and wherever there is a challenge, there are also opportunities. Opportunities and challenges are not consistent across sector players; there are some opportunities, such as serving new markets with year-round supply, that some firms and farmers feel they are particularly well placed to capitalise on while others may decide it is not for them.



Collectively, the opportunities identified describe the potential for a vibrant sector that places New Zealand at the forefront of high-quality, sustainably produced meat.

6 CONCLUSIONS AND OBSERVATIONS

While the sector is rightly focused on the current issues that it faces, it is equally important to have one eye trained to the future. The purpose of this study was in part to facilitate this by identifying and synthesising medium-term strategic opportunities and challenges facing the New Zealand sheep meat and beef sector. These opportunities and challenges are not definitive; they are intended as a base for debate and discussion.

Collectively, the opportunities identified describe the potential for a vibrant sector that places New Zealand at the forefront of high-quality, sustainably produced meat, rewarding farmers for meeting consumer expectations in both traditional and new markets. The report also identifies a set of challenges that, if met, will strengthen the sector's position globally but, if left, might well perpetuate a lack of profitability across the sector. Table 6.1 summarises these opportunities and challenges.

Importantly, the overall impression is that respondents in the sector are largely only confident in predicting small incremental change into the future. This does not rule out the possibility of more radical changes to the sector, but most respondents considered change of this nature as less likely.

Despite the obvious challenges that the sector faces over the next 10 to 15 years, this study has identified a general positive slant to people's perception of the industry's future. It is clear though that this rosy outlook will not be achieved through inaction or simply "carrying on as normal". New Zealand has a comparative advantage across much of the value chain. Leadership, vision and action are required from the sector to ensure this comparative advantage delivers a successful and sustainable industry into the future.

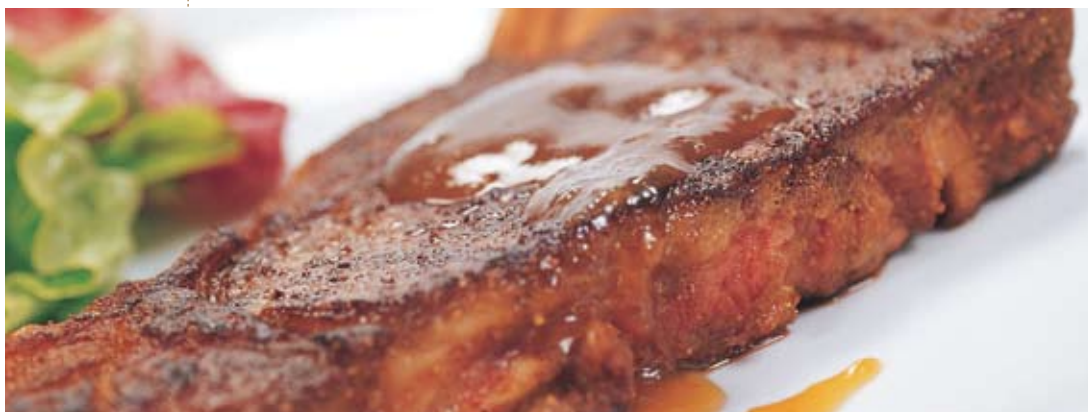


Photo: Meat & Wool New Zealand.

TABLE 6.1: SUMMARY OF MEDIUM-TERM OPPORTUNITIES AND CHALLENGES FACING THE SECTOR

OPPORTUNITIES	CHALLENGES
<ul style="list-style-type: none"> Global growth, demographic shifts, urbanisation and improved market access all allow greater potential for increased supply to NEW DEVELOPING MARKETS. 	<ul style="list-style-type: none"> The sector is likely to face increasing INTERNATIONAL COMPETITION from a variety of sources, including the vast ramping up of production and exports from lower-cost nations and from lower-cost and versatile proteins like pork and poultry.
<ul style="list-style-type: none"> Given capabilities across the sector, New Zealand is well placed to capitalise on SOPHISTICATED CONSUMERS' increasing demands for greater variety of product attributes. 	<ul style="list-style-type: none"> As the sector seeks to meet increasingly specific customer requirements, it will need to be able to do so within the CONSTRAINTS OF PRODUCING MEAT IN A BIOPHYSICAL ENVIRONMENT.
<ul style="list-style-type: none"> ENVIRONMENTAL PERFORMANCE in particular appears to be a potential future source of competitive advantage. EFFICIENCY GAINS on-farm and at the processor level. 	<ul style="list-style-type: none"> Environmental performance will need to be CREDIBLE AND VERIFIABLE. Increasingly severe adverse weather events and PRESSURES ON THE COUNTRY'S NATURAL RESOURCE BASE will test the resilience and sustainability of the sector. Increasing DOMESTIC SOCIETAL EXPECTATIONS for improved environmental performance from the agricultural sector.
<ul style="list-style-type: none"> Increasing INNOVATION INVESTMENT, including research, new product development and human capability. 	<ul style="list-style-type: none"> PROFITABILITY AND CAPITAL CONSTRAINTS may impact on the sector's ability to invest.
<ul style="list-style-type: none"> Opportunities identified in this area include increased MARKETING EXPENDITURE, BRANDING AND CO-OPERATION IN INTERNATIONAL MARKETING. 	<ul style="list-style-type: none"> The sector in general has historically LACKED A MARKETING FOCUS.
<ul style="list-style-type: none"> Increased New Zealand OWNERSHIP AND CONTROL OF DISTRIBUTION AND MARKETING CHANNELS. 	<ul style="list-style-type: none"> LARGE RETAILERS are dominating more of the value chain.
<ul style="list-style-type: none"> Opportunities have been identified for greater ALIGNMENT AND CONNECTIONS ACROSS THE VALUE CHAIN. An increased use of FORWARD SUPPLY CONTRACTS. 	<ul style="list-style-type: none"> A key challenge the sector needs to address is the current dichotomy between FARMERS' PREFERENCES FOR FLEXIBILITY IN SUPPLY, as characterised by the predominance of the spot market, and PROCESSORS' DESIRE FOR A MORE STABLE AND CERTAIN SUPPLY PATTERN. INDUSTRY STRUCTURE has been identified as a major constraint to the sector. The various strategic opportunities and challenges that the sector will face will likely drive the future. The SECTOR'S CULTURE was also identified as a major constraint.
<ul style="list-style-type: none"> If the sector can improve its international competitiveness by taking advantage of the above opportunities, then it will have greater ability to APPLY ITS CAPABILITIES AND INTELLECTUAL PROPERTY IN OFFSHORE LOCATIONS. 	<ul style="list-style-type: none"> A significant reduction in the SIZE OF THE SECTOR would present challenges in terms of scale and scope of the sector.

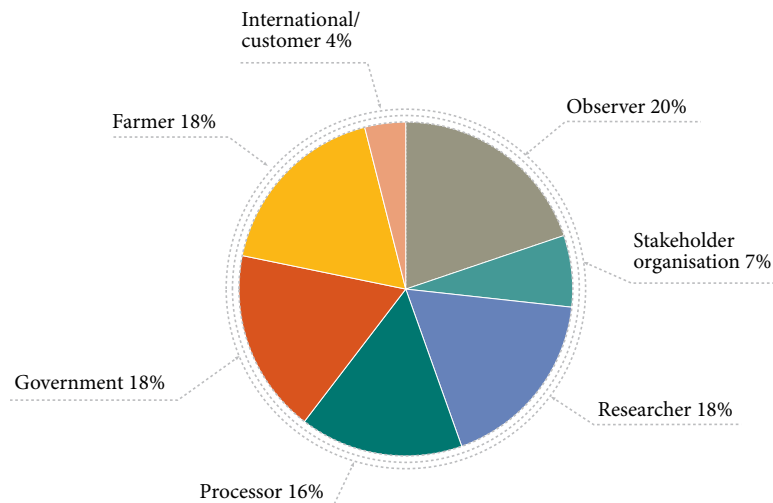
7 APPENDIX A: THE DELPHI SURVEY

The Delphi is a systematic interactive forecasting method used to generate forecasts from a panel of independent experts. Typically, carefully selected experts answer questionnaires in two or more rounds. After each round, a facilitator provides an anonymous summary of the respondents' forecasts from the previous round as well as the reasons they provided for their judgements. Thus, participants are encouraged to revise their earlier answers in light of the replies of other members of the group. It is believed that during this process the range of the answers will decrease and the group will converge towards the "correct" answer.

In 2008, MAF completed a Delphi survey of New Zealand's sheep meat and beef sector. This study was modelled on a similar study that identified strategic issues for Finnish agriculture (Rikkonen et al, 2006; Rikkonen, 2005). The Delphi method was chosen as a means for drawing on the collective knowledge and expertise of practitioners in and experts on the sheep meat and beef sector. It was seen as a method of looking beyond the immediate circumstances of the industry to identify medium- and long-term views of the sector.

The New Zealand study consisted of three stages. In February 2008, open interviews were conducted with a small expert panel. The expert panel was identified using the snowball technique, where respondents were asked to suggest candidates, who in turn were asked to suggest candidates. Eleven individuals from a short list were selected to cover the different aspects of the sector. Responses to questions were sought in open interviews that typically lasted an hour. The results of these interviews were aggregated and were used to inform the first survey questionnaire.

In June 2008, the first questionnaire was distributed to a much larger panel of experts. The Delphi panel consisted of 120 individuals drawn primarily from the snowball list. Again efforts were made to achieve balance and representation across the sheep meat and beef sector. This questionnaire focused on identifying significant change factors for the sector and an assessment of desired and likely changes over the next 10 to 15 years. It also sought respondents' views on challenges and opportunities and the state of the sector. This survey was distributed in June 2008. Figure A1 shows the composition of respondents to the first survey.

FIGURE A1: COMPOSITION OF RESPONDENTS TO FIRST SURVEY

In July 2008, a second survey was distributed. The second survey sought responses to other change factors identified by respondents in the first survey, together with an assessment of the likely magnitude of change. This survey also sought to validate the importance of the factors, as identified in the first survey.

The intention of the research was not to gain a statistically robust representative view of the meat sector as a whole, but rather an overview of respondents' informed opinions.

Although the Delphi survey sought to look 10 to 15 years ahead, the results of this survey, like any survey, are inextricably linked to the present time and current sector conditions. This is something to be aware of when analysing the results.

8 APPENDIX B: DELPHI DISCUSSION ON STRATEGICALLY IMPORTANT FACTORS

DESIRABILITY AND CONFIDENCE

In the first survey, respondents were asked to identify their desired future changes in these factors, that is, what they would like to see happen. Respondents were also asked to identify the change that they expected to see happen, that is, what is most likely.

A measure was then made of the difference between desired and expected change. A small difference indicates that the expected change is desired. A large difference indicates that the expected change is substantially different from the desired change.

Respondents were also asked how confident they were that the expected changes would occur. They were very sure of their answers in some factors, and less so in others.

FIGURE B1: RELATIVE STRATEGIC IMPORTANCE MATRIX

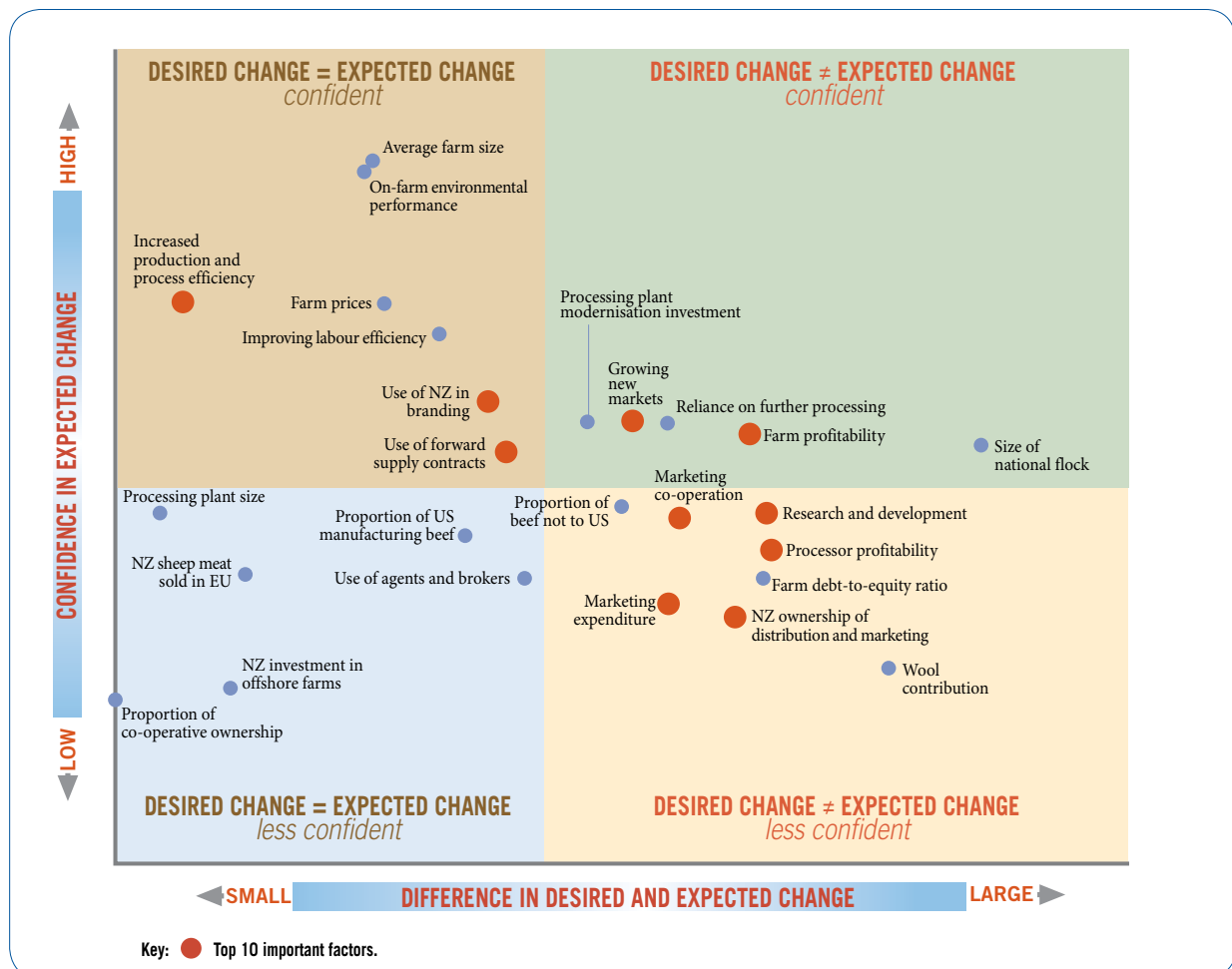


Figure B1 classifies the factors of strategic importance depending on:

- › difference between desired and expected change;
- › confidence in the expected change.

The top 10 most important factors as identified in the second Delphi survey are discussed below.

DESIRED CHANGE = EXPECTED CHANGE (CONFIDENT): Factors with high confidence in the expected change and whose expected change is widely agreed to be desirable can be seen as predictable (although by no means certain).

USE OF FORWARD SUPPLY CONTRACTS

- › Most respondents considered that forward supply contracts would be used to procure at least 20 to 40 percent of stock.
- › Half considered at least 40 to 60 percent of stock would be procured by way of forward contracts.

Respondents clearly identified that unattractive contract prices were the main barrier to farmer uptake of procurement contracts, with a farmer preference for spot markets as the second most important factor.

THE USE OF “NEW ZEALAND” IN BRANDING

- › Most respondents saw the use of New Zealand in branding as desirable.
- › There was moderate confidence that there would be an increased use of New Zealand in branding.

Some noted that New Zealand is synonymous with high product attributes. Some experts, however, considered that generic branding devalued individual brands and played to a lowest common denominator quality standard. Others identified that “the New Zealand story” is largely unknown in Asia.

When asked to quantify total lamb sales by “dominant brand type”, the majority of respondents considered that less than 20 percent of lamb would be sold with only a generic “New Zealand lamb” brand. Use of supermarket house brands were seen to be the most dominant brand type, although a “New Zealand lamb” brand could also be incorporated into supermarkets’ own branding.

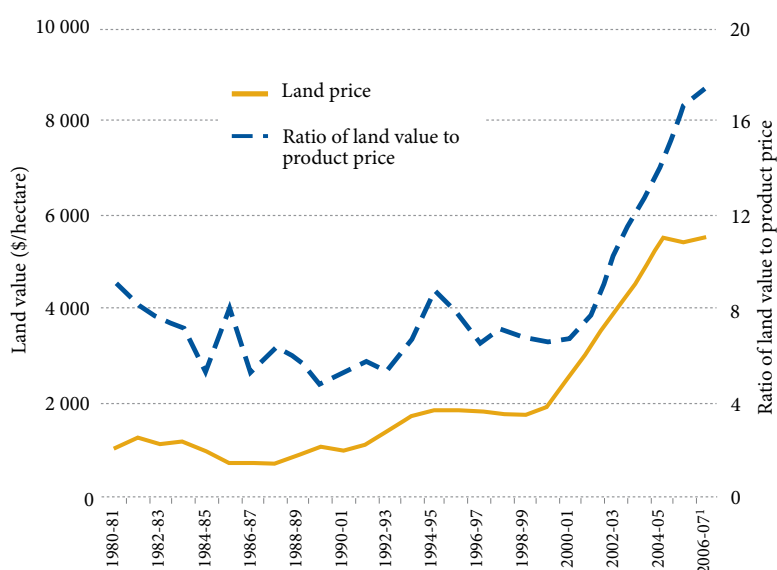
RELIANCE ON PRODUCER AND PROCESSOR EFFICIENCY

Respondents generally agreed that both producers and processors would continue to rely on becoming more efficient to help sustain the sector.

They were also confident that efficiency gains would be important; possibly reflecting the sector's historical ability to achieve efficiency gains. It is important to note that over the last 20 years the industry has moved to a higher cost structure. Figure B2 shows the increase in land price over the last 25 years and the ratio of land price to product price. This suggests that land value has appreciated ahead of rises in product prices. While improved efficiencies will no doubt be required to help redress this situation, it could be argued that with a higher cost base the sector will also need to focus on improving product value.

DESIRED CHANGE = EXPECTED CHANGE (LESS CONFIDENT): Expected change is desirable, although there is not a high degree of confidence that this change will occur. While these factors could reasonably be ignored in any high-level analysis, they could have a wildcard impact should they eventuate and accordingly should not be completely discarded.

FIGURE B2: NOMINAL LAND VALUE PER HECTARE AND RATIO OF LAND PRICE TO PRODUCT PRICE (LAMB)



Source: Meat & Wool New Zealand Economic Service.

Note

¹ 2006/07 are projected figures.

None of the top 10 factors of strategic importance were identified as having low confidence in the change and low variability of the likely and desired outcomes.

DESIRED CHANGE ≠ EXPECTED CHANGE (CONFIDENT): These are factors with high confidence in the expected change, but whose expected change is considered to be undesirable – that is, there is a large difference between the change that respondents’ desire and the change they expect. These factors have high strategic significance, requiring some sort of action to address.

SHEEP AND BEEF FARM PROFITABILITY

- › Most respondents considered farm profits would increase but not by as much as desired.
- › Over two-thirds considered annual profits would be at least somewhat consistent.
- › Respondents identified that the most important drivers for improved farm profitability are likely to be:
 - higher global meat prices;
 - higher prices paid for New Zealand meat compared with international competitors;
 - improvements in on-farm efficiency.

As mentioned above, and discussed in the scenario section, profitability is particularly linked with changes in other factors of strategic importance.

- › Respondents generally considered that returns from wool were important in lifting farm profitability.
- › They were not confident in the likelihood that wool would actually contribute to improved fortunes.

RELIANCE ON GROWING NEW MARKETS

- › Nearly all respondents considered generating and growing new markets desirable.
- › Three-quarters thought that this was likely.

The predicted proportion of sheep meat exports by value suggests future increases in market share to the Middle East/North Africa and to China (and potentially Russia and India). It is predicted that exports to the EU and to a lesser extent North America will reduce. The reduction in the proportion of sheep meat exports to the EU is relatively uncertain. No significant changes in market share are expected for beef exports. These views are broadly consistent with some of the broad trends in population, income growth and forecast global demand identified later in this report.

DESIRED CHANGE ≠ EXPECTED CHANGE (LESS CONFIDENT): The expected change in these factors is considered undesirable. However there is lower confidence that this expected change will occur. This indicates that there is more room to “change the future” and thus achieve a more desirable outcome.

INVESTMENT IN RESEARCH AND DEVELOPMENT

- › Nearly all respondents wanted an increase in the level of research and development in the sector.
- › Two-thirds of respondents thought this increase would occur and the other one-third considered there would be no change.

PROCESSING COMPANIES' PROFITABILITY

- › Most respondents wanted meat processor profitability to improve over the next 10 to 15 years.
- › Three-quarters of respondents believed profits would increase by at least 10 to 25 percent.
- › Respondents did not consider this likely increase in profitability was sufficient nor were they confident that it would occur.

Respondents were asked to identify the most important reasons that would likely contribute to processing companies' improved profitability. They overwhelmingly identified co-ordination/ co operation throughout the value chain and industry rationalisation and/or consolidation. The third most important reason was investment in developing new market and/or products.

LEVEL OF CO-OPERATION IN MARKETING

- › Most respondents wanted increased co-operation between New Zealand companies in international marketing.
- › Only two-thirds of respondents thought that this is likely, and confidence in the outcome was low.
- › Around 80 percent of respondents considered that at least 10 to 20 percent of New Zealand sheep meat exports will be marketed co-operatively.
- › Only one-third considered that at least 20 to 30 percent will be marketed this way.

At present only lamb sold into North America is marketed in co-operation between companies, and this market represents less than 6 percent of total New Zealand lamb volume sold. Therefore, there may be some incremental move towards more co-operation in marketing. However developments like

major industry consolidation may preclude this from occurring in any significant way. The level of co-operation in marketing may also be linked to the use of “New Zealand” in branding, as co-operation between New Zealand companies in marketing may be focused around a “common story”.

MARKETING EXPENDITURE AS A PROPORTION OF TOTAL EXPENDITURE

- › Around half of respondents considered that the sheep and beef sector’s marketing expenditure as a proportion of total expenditure would increase over the next 10 to 15 years.
- › 40 percent thought it would stay the same.

While investment in developing new markets was seen as important for the industry’s fortunes, investing in developing traditional markets was not considered as being a major driver for profitability.

NEW ZEALAND OWNERSHIP OF DISTRIBUTION AND MARKETING NETWORKS

- › Most respondents wanted New Zealand to have greater ownership and control of distribution and marketing.
- › Only half considered that this was likely to happen.

Some experts noted that one large company had recently sold its British further processing and distribution plant, and that the sector was suffering from lack of commitment by trading intermediaries. Half of respondents considered that at least 40 to 60 percent of New Zealand exported meat would be distributed by New Zealand owned distribution and marketing networks and firms. We are unaware of what the current percentage is.

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