Agribusiness Research and Education Network

Funded by

AGMARDT
THE AGRICULTURAL AND MARKETING RESEARCH AND DEVELOPMENT TRUST

New Zealand Agribusiness: Structure, Conduct and Performance

VENISON

The key elements of success and failure in the NZ venison industry

October 2008

Paper prepared by:
Associate Professor Nicola M. Shadbolt, Alan McDermott, Cornelius Williams, Tracy Payne, Professor David Walters, Yimin Xu

Acknowledgements

We would like to acknowledge the contributions from all those interviewed for this project.

We also value helpful comments from AREN participants. AGMARDT is acknowledged with appreciation for funding this research.

Associate Professor Nicola M Shadbolt,
IFNHH, College of Sciences, Massey University
N.M.Shadbolt@massey.ac.nz

Alan McDermott, Senior Researcher, AgResearch, Ruakura Research Centre, Hamilton
alan.mcdermott@agresearch.co.nz

Tracy Payne
Tracy.Payne@agresearch.co.nz
Researcher, AgResearch, Ruakura Research Centre, Hamilton

David Walters, Professor of Value Chain Management
Cornelius Williams, Junior Lecturer
Yimin Xu, Research Assistant
All previously at IFNHH, College of Sciences, Massey University

Table of Contents

Executive Summary

This study explores the nature and performance of the New Zealand venison industry from 1980 to 2007. This study has identified a number of critical success factors that have enabled the venison industry to develop. These include:

- Intrinsic attributes of venison as a game product and New Zealand as the origin;
- Existing market in the early stages of the industry's development;
- Early pioneers recognising the opportunity and responding in kind, including securing legislative support for deer farming;
- Comparative production advantages;
- Economies of scope and scale in the processing/exporting sector to allow ready diversification of markets when supply increased rapidly;
- Communication along the value chain, especially with customers and chefs; and
- Industry co-operation involving a collective strategy and alignment of promotional funding.

Scientific knowledge and expertise from researching other farmed animals was used to determine how deer could successfully become a farmed animal. Key areas included deer handling, reproduction, yarding and feed requirements. Further input will be necessary to better match venison supply with demand.

The venison industry has limited market control. The existence of a ready and relatively large game meat market in Germany was a significant factor in the venison industry growing to its current level. While demand exceeded supply, the lack of market control was not a concern. Markets readily accepted New Zealand deer products without large expenditure on advertising or education programmes. However, when demand dropped after Chernobyl the industry realised it had to foster an improved strategic position by branding NZ product. When market control is difficult to achieve, improving the value proposition is necessary to ensure demand is not lost. The first branding initiative with the Zeal brand was not successful in Europe. However, country of origin has become an important point of difference with the expansion into the retail sector in this market.

Market control can be partially achieved through managing supply and this has been exercised by moving product to other markets. This was more possible in 2007 when 85% of the kill was handled by one processor. The presence of the German market also possibly meant that the industry did not pursue other market opportunities to the same extent, increasing exposure in the event that supply exceeded demand, as it did in recent years. However, new markets often are more sensitive to price and are costly to develop. The average price paid to farmers therefore drops and their response is to decrease the number of deer they farm. After the inevitable oversupply caused by this decrease, the supply level off and average price lifts again as product moves away from the lower priced markets. There is significant risk created by developing such new markets and products without any certainty or control of supply.

As with market control, the value proposition strategy was of less concern when demand exceeded supply. However, as described, various attempts have been made to differentiate NZ venison. In some instances, this has meant exploring new markets, as with Cervena to the US food service market, and, more recently developing year round supply to the European retail market. However, the ability to further extend the value proposition in the wholesale market is limited.

The venison industry does have challenges, and some of these have existed for some time, affecting the ability of the industry to maintain long-run profitability of all participants along the chain. The volatility of venison supply (influenced by the venison price as well as non-venison factors of velvet prices and competing land uses) and the inherent seasonality of both production and demand remain the most significant challenges. However, exporters have been relatively successful in expanding their customer base to enable this surplus to be disposed of. Others include managing customers' expectations when supply declines, and the need to balance communication with producers and customers with the need to retain information to maintain a competitive advantage.

Venison is an industry in which alternative strategies are required for differing markets. When supplying an ingredient into a wholesale food service market to achieve 'preferred supplier' status the focus on quality assurance delivering consistent product has proven to meet the customers' requirements more than branding our product. Conversely supplying into a new 'white table cloth' food service market in the US required the development of strong brand recognition; similarly the European retail markets require connection with the end user and promotion to achieve product awareness. Therefore, contrary to popular opinion following a branding strategy is not the solution to all marketing challenges. The industry provides a good illustration of the importance of understanding the customer and being responsive to their requirements, including withdrawing from the branding attempt with Zeal in Europe.

Branding plays only a very small role in the success of the venison industry, through Cervena in both USA and New Zealand domestic markets. Many of the strategies implemented within the venison industry to date have been aimed at improving the supply chain, the quality of the product and the efficiency of delivery. These factors have been critical to maintaining the custom of the largest group of customers in Europe. Generally, there has been less emphasis on determining and communicating the unique value proposition New Zealand venison can deliver to each of the three long-term customer groups and devising what, if any, market control strategies can assist in that delivery. However, recently there has been a concerted effort by both exporters and DINZ to emphasise the value proposition of New Zealand venison, through branding and promotion, and this has led to the growth of the third major customer group, the European supermarket retailers.

Growth should be carefully managed, if possible, to avoid a repeat of previous price volatility. Ensuring supply of venison is controlled, and aligned to the demand from its core game meat market in particular, the demand from the USA and the newer European supermarket trade, is more possible now a large percentage of the kill goes through one processor. However, there is nothing to stop new processors and exporters entering or exiting as market prices improve and decline. Local and

international legislation discourage the type of market control that is required to achieve price stability. This is an ongoing challenge to the venison industry.

1 Introduction

THE EXAMINATION OF THE PAST IS ESSENTIAL for drawing lessons from previous experience so that informed future decisions can be made. The Agribusiness Research and Education Network (AREN) have undertaken this study of the New Zealand venison sector as part of a wider analysis of structure, conduct and performance across major agribusiness sectors over the past two decades. The wider project includes three other sectors - kiwifruit, sheep meat and dairy sectors.

By examining the different stages of development in the venison industry and identifying the key determinants of success this research aims to develop a research basis that will assist policy formation in strengthening New Zealand's venison sector. This will be achieved through comprehensive research and analysis that will provide lessons to enable strategic planning for efficient, productivity driven growth.

Overview of the Research Project

This project uses the sequential framework proposed by Yin (2002) for steps in a multiple-case research project, which are define and design; prepare, collect and analyse within case; compare findings from cases (cross-case analysis); and conclude. The first stage of define and design involved a review of studies on business structure, management practises and performance indicators related to agri-food systems in New Zealand and overseas. Following on from this review, a brief historical overview for each of the sectors was completed. The review of literature and the historical overviews guided the development of the theoretical framework that underpin the research project, the data to be collected and the specific data collection methods. The theoretical framework was used to develop semi-structured interviews which were conducted with personnel from a wide range of businesses and organisations involved in each sector, either at present or in the past. The interviews were based mainly on open-ended questions following the usual three stages of interviewing: Opening (rapport building), developing and closing. Through the interview process key factors influencing management decisions were identified and described. The researchers were seeking to develop descriptions of the firms with respect to structure, conduct and performance; and to build a clear understanding of the strategic supply chain responses over the years.

The Research question

Since the first deer farming licence was issued in April 1970 the New Zealand venison industry has been through substantial change as a result of internal firm and sector developments, external pressures from customers, governments, competitors and ongoing business evolution. These changes are examined to provide a better understanding of the development path of the venison industry. This historical review will provide an understanding of how business structure and conduct (both strategic and operational) influenced the performance of the venison industry.

The objective of this study is to explore the key elements underlying the success of the New Zealand venison industry. Therefore in examining the structural changes, conduct and performance of the venison sector, the research question that we are addressing is:

What have been the key elements of success and failure in the NZ venison industry?

In answering this question, the following questions will also be addressed:

- *How has New Zealand's venison value chain evolved?*
- *Why did New Zealand's venison value chain evolve the way that it has?*

In responding to these questions this study will identify the range of factors that have driven success in the venison industry and will also evaluate the importance of these factors at different stages in the industry's development.

Motivation behind the research

This research is motivated by the need amongst agribusiness researchers for a robust foundational knowledge base on the venison sector in New Zealand. Future performance can be enhanced as a result of rigorous analysis of the past if the lessons are applied. This knowledge of the past can directly impact on current policy analysis and new and ongoing research and marketing programmes.

From a planning point of view, we have to understand the structure of the venison industry, its operations, and the practical relationships which already exist between industry participants. Changes that have occurred in the environment in which the industry operates also need to be examined so that future industry challenges can be informed by these past conditions and responses.

Research coverage

The study explores the nature and performance of the New Zealand venison industry, which is relatively young, exports ingredient and branded products into relatively few markets, has undergone some consolidation at the processing level, has a highly seasonal supply and demand and has achieved very volatile returns.

A value chain approach is used to define the venison industry in New Zealand. The value chain approach recognises that value chain management creates multi-enterprise organisations that integrate supply chain efficiencies with demand chain management processes that anticipate customer expectations and ensure the availability of products and services in the right place, at the right time, at the required level of service and at the lowest possible supply chain cost.

The value chain links the key participants and organisations that ultimately bring venison to consumers. It clearly determines demand and the value proposition created by such demand then defines the supply chain attributes (on and off-farm, local and international) that deliver to that demand.

The examination of the industry since inception can be separated into the following key focus areas:

- An overview of the industry – the emergence of the industry, production trends, trends in production and consumption of venison worldwide.

- A definition of the demand for venison - target markets, changing consumer preferences and value propositions

- Operating environment – what external factors have changed to impact on the industry.

- Industry structure and social capital – the evolution of firm and industry level structures in response to changing circumstances and environments.

- The supply chain response – factors influencing supply and the main strategic supply chain responses of the industry

Research method

Data for the case was collected using in-depth interviews with key industry participants and secondary data analysis. To ensure a comprehensive set of respected information sources a list of key individuals from within the industry was required. Hence key industry people including past and current industry leaders were identified. The process identified people from all of the key groups within the industry including farmers, processors and exporters, research groups and Deer Industry New Zealand (and its predecessors). The sampling procedure involved snowball sampling, initial interviewees helped identify other people to contact. After each interview the data was examined and used as the basis for subsequent interviews, all the while identifying levels of support or areas of disagreement between the interviewees (Strauss and Corbin, 1992).

A parallel activity was the collation of secondary data from industry body web sites and publications (New Zealand Game Industry Board, Deer Industry New Zealand, Ministry of Agriculture and Forestry and Statistics New Zealand) as well as previous research and commercial publications on aspects of the NZ deer industry (Clouston, 1974; Pearse et al.,1994; Yerex, 1982 & 2001; Tuset, 2000; Nixon and Duncan, 2004; Beverland, 2005) and commentaries on the global deer industry (Tuckwell et al, 1998; Deerfarmer.com, 2003).

Integrating the interview information with the secondary data within a value chain framework resulted in the development of some interesting perceptions of the drivers of the deer industry evolution. A first attempt at collating these perceptions was presented as a paper at the International Agribusiness Management Association Congress in 2007 (Shadbolt et al, 2007); feedback received from this presentation enabled the researchers to further refine their understanding of the fundamental issues influencing venison performance.

Gattorna and Walters (1996) identify the objective of the supply chain concept is to synchronise the service requirements of the customer with the flow of materials from suppliers such that the apparent contradictory situation of conflicting goals of high customer service, low inventory investment and low operating costs may be balanced (or optimised). The focus at the strategic level should develop:

- Objectives and policies for the supply chain to achieve competitive superiority;

- The physical components of the supply chain;

- A statement of customer service intent by product-market, customer group, or perhaps by large customer.

- An organisation structure capable of bridging the functional barriers and thereby ensuring an integrated value delivery based supply chain.

Brown (1997) suggests, using Porter's views on competitive advantage, that: "The way in which (a business) manages its value chain will affect its cost structure and the differential benefits offered to its customers, and thereby its competitive advantage". Understanding the restructuring and redistribution of value issues is therefore central to value chain analysis, strategy and management.

The importance of value is also reinforced by Parnell (2006) in his proposal for a new framework (also based on Porter's) for conceptualizing business strategies. His framework follows the logic of the resource based view of the firm and is sensitive to changes in the competitive environment. He identifies how cost leadership, differentiation and focus can be seen as component parts of an organisation's value proposition and how aspects of industry structure such as erecting barriers to entry, instituting switching costs and exerting control over supplier relationships are a proactive part of business strategy. He identifies two key and not mutually exclusive dimensions of strategy – value (the relationship between perceived worth and cost) and market control.

Parnell (2006) suggests two key questions when evaluating strategies:

1. what limitations do industry structure and other factors place on strategic options – most notably the level of market control an organization can exhibit? Control, he states, is desirable for all organisations and essential for those unable to deliver a strong value proposition

2. what valuable resources possessed by the organization can foster an improved strategic position and how do those resources influence the success or failure of the strategy pursued by the firm? A firm's collection of resources creates the context for the value proposition it can deliver.

The only time a lack of emphasis on value and market control works, he states, is when demand exceeds supply and an industry is growing rapidly.

Today's reality about global manufacturing and global trade in agribusiness supports the posture of the value chain management literature. The conduct of agribusiness encounters distinctive and particular challenges. Beverland (2005) identifies how, despite qualitative differences between the produce of one country and another, products are generally positioned on the basis of price, with little consideration for the needs of the supply chain, business-to-business customers and consumers. While agribusinesses may have improved the technical specifications (quality and production efficiency) these factors are imitable by competitors so do not lead to a sustainable competitive advantage, nor provide a means of

differentiation. Inconsistent levels of supply, and product variation, due to differences in the local environment, also means agribusiness face unique and complex challenges when developing global brands (Beverland, 2005).

There has been considerable restructuring and redistribution of value within the venison value chain over the last twenty years that needs to be better understood. No previous studies have focused their attention on the value chain management process from the perspective of the past providing insights for the future.

Report Structure

In this introductory section a brief overview of the venison industry in New Zealand provides background to the following chapters. This overview describes how the venison industry emerged in NZ with product sourced from both hunted and farmed deer. The sources and consumption of venison worldwide over recent years is then outlined.

Chapter two examines the key characteristics of the demand chain for venison as it has evolved. Chapter three explores the operating environment for the period whilst Chapter four focuses on industry structure. Chapter five explores the supply chain whilst Chapter six identifies critical success factors. Chapter seven concludes by reporting industry perspectives on future challenges the industry faces.

Overview of the Venison Industry

The emergence of a venison industry in New Zealand

The development of a venison export industry occurred in two distinct phases. Firstly, the hunting phase and secondly, the farming stage. Deer were first introduced to New Zealand in 1861 primarily for recreational hunting purposes for antlers with venison the by-product. By 1917, over 100 deer had been imported by private individuals, government and Acclimatisation Societies. The deer population increased quickly due to the favourable climate and a lack of natural predators and had reached 300,000 by 1925 by which time they were beginning to cause damage to field crops and native forests.

In 1931 the Internal Affairs Department formulated a policy for deer control. Shooters were paid by the government and sent in on foot to control the deer population, but the number of deer killed did not match the extent of their reproduction, and deer numbers continued to increase (Tuset, 2000). By 1955, payment was based exclusively on the number of animals killed. The export trade in venison started in the late 1950s. Three factors were important:

- The existence of well-established markets for venison in Europe, and
- The abundance of deer in relatively open valleys, vast tussock areas, and open tops in the Otago-Westland area
- A pool of expertise available to develop the industry (Yerex 2001).

In 1967/68 over 150,000 carcasses were recovered in the South Island alone (www.maf.govt.nz). Aerial shooting of deer commenced on a large scale in the 1960s. These operations were very effective in reducing deer numbers, processing premises were developed to handle the carcasses and exporters and overseas importers devised hygiene standards; a profitable game meat industry developed, turning a pest into an export earner.

Industry pioneers saw an opportunity in the early 1970s to build on this base by capturing live deer and farming them. However, deer became more and more difficult to find. Feral production peaked in 1972 at 4,100 tonnes (Tuset, 2000) and has averaged about 1,000 tonnes per year since 1985 (Nixon and Duncan, 2004).

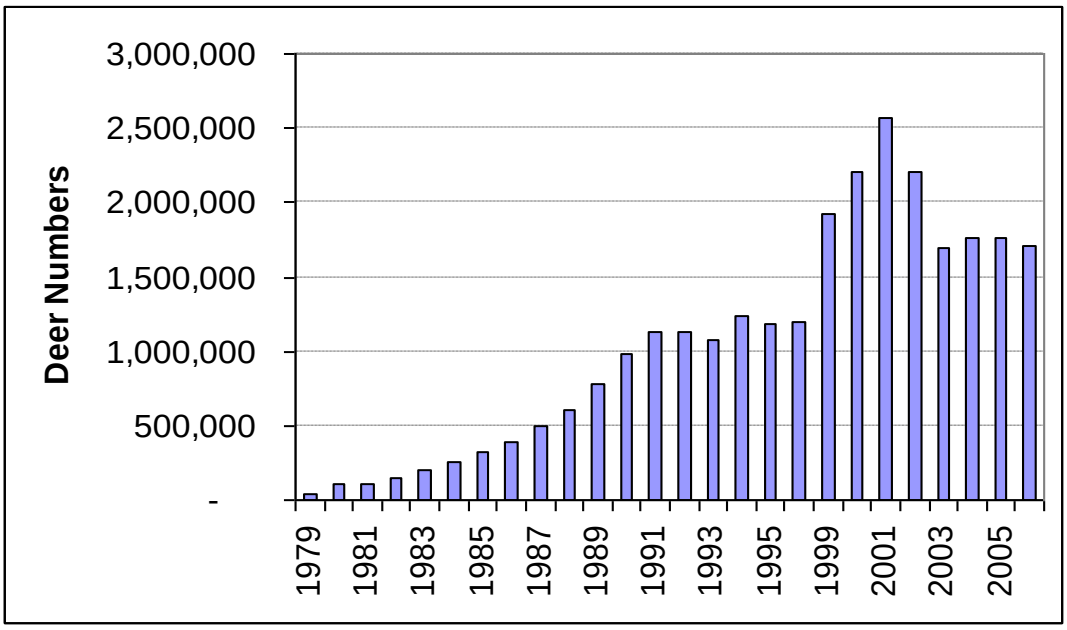
Until 1969 deer had been classified in New Zealand as noxious animals. The Noxious Animal in Captivity Regulations 1969 was passed to reclassify deer as a farmed species, and deer farming began (Tuset, 2000). The regulations included rulings on obtaining a licence, conditions of issue, stocking the farm, transfer of licences, practical aspects of deer farming, developing a deer farm, winter feed, animal production, the rut, castration, stocking rates, methods of capture, weight gains, revenue from deer farming, venison flavour, velvet farming, lending margins, and present research (Clouston, 1974). The first deer farming licence was issued on 3 April 1970 (MAF, 1989).

In 1975, the New Zealand Deer Farmers Association (NZDFA) was formed. In addition, an Act of Parliament formed the New Zealand Game Industry Board (NZGIB) in 1985. It was a statutory Government body, but without single-desk seller status. Towards the end of 2001, deer farmers decided to combine the NZGIB and NZDFA. These bodies merged in 2002 to form Deer Industry New Zealand (DINZ).

New Zealand now has one of the largest populations of farmed deer in the world; red deer making up approximately 85% of the New Zealand farmed deer population, with fallow deer comprising approximately 10% and wapiti/hybrids comprising the remaining 5%. In 2007 there were an estimated 3,800 farms in New Zealand with deer, however the number has been higher; Statistics NZ estimate there were 15% fewer deer farms in June 2005 than in June 2002 (DINZ, 2006). These farms range in size from smaller lifestyle properties to extensive stations. Generally, deer are farmed as part of a diversified livestock portfolio with other species including sheep and cattle.

By 1985 there were 320,000 farmed deer, within six years this had increased to over one million after which there was a gradual increase to 1.2 million then, in 1998, numbers increased sharply. The deer herd then increased rapidly peaking at just over 2.57m in 2002 since when it has declined to 1.705m in 2007.

Figure 1.1: Total deer numbers in New Zealand from 1979-2007 (Source: www.maf.govt.nz)



The New Zealand deer industry now produces not only venison, but also a variety of other products including velvet antler, leather, health tonics, food products, pizzles, sinews and other special co-products for specific market demands.

The values of all exports from the deer industry have risen from approximately $100 million per annum in 1991 to $282 million in the 2006-07 year. Venison production has been a growth export industry, with returns increasing from $60 million in 1991 to $221 million in the 2006-07 year. Venison exports accounted for 79% of deer industry exports in that year with velvet at 10%, hides and leather at 7%, co-products at 3.7% and live shipments at 0.3% (www.deernz.org).

A background of Venison worldwide

Most of the world's venison is provided by the feral herds of northern Europe, North America and Russia and from farmed deer in New Zealand. Reindeer are the most commonly farmed deer type and are found in Scandinavia, Canada and Russia. In 1994 world farmed ('managed' is possibly a better term as many of these deer are only penned for key events such as weaning) deer numbers were estimated at 6.5 million. Russia had the largest number of deer with an estimated 60% of the world total. New Zealand with around 1 million deer was second with 14%. If reindeer (63% of the farmed numbers) were omitted then New Zealand had around 40% of the farmed deer and was the world leader then in this type of farming (Pearse et al, 1994).

The largest production of venison is from the reindeer herds of Scandinavia and Russia then the managed feral herds of Europe. About 80% of this feral kill is consumed by hunters themselves and only 20% is sold commercially. For example on a carcass weight basis, the 1988 European annual hunt tally was 40,600 tonnes (Table 1.1), 11000 tonnes of which was sold commercially; farmed venison amounted to just 1400 tonnes. The major hunt tally was from Sweden with 18300 tonnes that was

moose meat. Germany was next with 12000 tonnes followed by Austria and Great Britain with around 6000 and 3000 tonnes respectively. Of the imports 8,000t were from east European hunts (Pearse et al, 1994).

Europeans, Scandinavians and Russians, the largest consumers of venison, have traditionally consumed large quantities of game meat during the October-December hunting season. With the exception of the UK only 16% of the hunt reaches the local market, the balance was consumed by hunters and their families or exported (Pearse et al, 1994).

Table 1.1 : Venison Supply and Consumption in Europe in 1988
(Source: Pearse et al, 1994)

Country	Hunt(t)	Imports(t)	Total (t)	Consumption (g per capita)
West Germany	11,500	3,500	15,500	250
France	2,400	4,800	7,000	125
Switzerland	900	2,500	3,400	500
Austria	6,000	1,000	4,500	600
UK	3,000	180	1,000	20
Sweden	18,300	1,000	19,300	2500
Total	40,600	12,980	50,700	268

Germany is the largest importer of venison; its imports of game meat in 1992 were 14060 tonnes (Table 1.2). The main imports in 1992 were from New Zealand and Poland with 35% and 31% of market share respectively. By 2002 Germany was still the largest consumer of venison importing about 20,000 MT per year, most coming from New Zealand in the form of frozen, deboned cuts in portion control packaging (Deerfarmer.com, 2003). Demand for venison from other countries has been growing slowly.

Table 1.2 : German Game Meat Imports 1988 & 1992 (Source: Pearse et al, 1994)

Country	1988 (t)	1992 (t)	% Difference
Spain	1,090	794	-27
France	419	335	-20
UK	1,107	720	-35
Yugoslavia	559	673	+20
Poland	2,123	4,382	+106
Czechoslovakia	1,264	1,162	-8
Hungary	1,131	399	-65
New Zealand	1,128	·4,983	+341
South Africa	726	120	-83
Other	936	1,220	+30
Total	10,483	14,060	+34

From very low numbers in 1970, the world farmed deer industry has shown continued growth although in several countries like New Zealand numbers have started to decline.

As in any livestock industry when numbers are increasing premium prices are offered for breeding stock and reproductive products such as semen and embryos. For example, auction prices for pregnant wapiti hinds climbed from Can$1200 to Can$25,000 soon after the industry became established in western Canada in the mid 1970s (Deerfarmer.com, 2003).

Europe

Deer farming began in Europe in 1970's. Deer farming has developed differentially in European countries and development is affected by many social, political and geographical factors. Difficulties for development and expansion relate to lack of government interest in deer farming and opposition from environmentalists and hunters. In most European countries it is illegal to cut velvet for sale so deer farming

in Europe aims at venison production only. Fallow deer are the main species on farms (Tuckwell, Shapiro & Thonard, 1998).

There is under production of farmed deer in these countries, they were limited by restriction on breeding stock and the non-availablity of breeding stock (Pearse et al, 1994). Deer farming produces products that meet client specification and meet requirements of developing farming trends in Western Europe (Tuckwell, Shapiro & Thonard, 1998).

In Eastern Europe deer farming is less developed and is based on the development of hunting enclosures during Russian control. There is lack of expertise and knowledge about management and breeding of intensively farmed deer and there are no organised 'deer farmer' groups. Also many political obstacles are trying to slow the development of deer farming. Most deer meat products consumed are sourced from wild shot deer.

USA

Within the USA, there is a strong hunting lobby but only a few deer farms. Deer farming and venison sales were still prohibited by law in some states in 1994. At that time only about 700 tonnes of venison was sold annually within the US (Pearse et al, 1994). The greatest difficulties facing deer farming in the USA relate to State and Federal regulation. There are an estimated 250,000 farmed deer in the USA. Marketing problems exist for producers because Venison is not included in the USDA Red Meat Act (Tuckwell, Shapiro & Thonard, 1998).

From 1993 to 1996 the value of venison consumed increased by 82% in North America. Over 90% of all imports were sourced from New Zealand.

Canada

The Canadian Venison Council (CVC) was formed in 1992 as a National industry body with a focus on political lobbying and to undertake research and development activities. Canada has in total 98,651 farmed deer and 1,667 deer farms. Traditional markets for venison are principally serviced by Red and Fallow deer producers while Wapiti producers concentrate on velvet antler markets. The Canadian inventory is precise because most provinces require individual animals to be tagged and registered. The future for the Canadian industry appears bright as improved management and production techniques have reduced the opposition to deer farming (Tuckwell, Shapiro & Thonard, 1998).

Australia

Australian industry comprises about 200,000 animals on about 1200 farms. Australia produces about 1000 tonnes of venison annually and about 20 to 25 tonnes of velvet. The deer industry is smaller and involves a greater diversity of species farmed under a wider variety of conditions. Australian producers are keen to develop partnerships with international producers to help stabilise the industry with high quality products (Tuckwell, Shapiro & Thonard, 1998).

Asia

Countries that farm deer in Asia vary markedly in their environment and so the species of deer farmed also vary. The deer industry in Asia is similarly large but numbers are not very precisely known. In Asia farming systems are almost entirely focussed on the production of velvet antler so the stag:hind ratio is around 60:40 compared to 35:65 in New Zealand; few deer are killed for venison (Pearse et al, 1994). In Russia, Sika deer are concentrated in eastern states in open grazing systems with heavy supplementary feeding during winter. Korea is the other main Asian deer farming country with between 100,000 to 200,000 farmed Sika, Red and Wapiti deer. The industry is based on velvet production and is growing rapidly (Tuckwell, Shapiro & Thonard, 1998).

Asia was a major market for deer products well before the expansion of worldwide deer farming began in the 1970's. Major products traded included velvet antlers. The USA is an increasingly important market for them. Almost all New Zealand co-products are exported to Hong Kong, Taiwan and Japan.

Korea imported 4,941 MT of venison from New Zealand and Australia in 2002. Most of the product was imported as frozen de-boned cuts by surface transport (Deerfarmer.com, 2003). Japan imported about 144MT of venison mainly chilled or frozen loin and boneless leg. (Deerfarmer.com, 2003).

Kuwait imports about 1 metric tonne of venison per year. Most of it comes from New Zealand and all the venison is consumed by the hotel and restaurant industry (Deerfarmer.com, 2003).

2 *The Demand for Venison*

New Zealand venison is sourced by three main customer groups:

- European game meat wholesalers, who then on sell it to small goods manufacturers, caterers, butchers and restaurants;
- US importers/distributors, who on sell it to restaurants, and some high-end supermarkets; and
- European supermarket retailers.

Demand from the first group is largely based around the Northern Hemisphere game season from October to December. This demand is steady and long-standing. The second group of customers was developed when the industry realised after Chernobyl in 1987 that New Zealand venison had no brand recognition in the key European market, and as such would always be subject to the vagaries of the ingredients market. The Cervena appellation was critical to the establishment of this market.

The third group is more price-sensitive, and it has only recently emerged as a customer group as prices have decreased and New Zealand exporters had the need to diversify the customer base to consume additional venison supply. Exporter brand and country of origin are important to these customers. There is a fourth group of customers, manufacturers of small goods in other countries such as Australia that was developed recently to clear the surplus venison inventory that existed through the mid-2000s.

More recently, as the supply of venison has increased, the industry led by DINZ have sought to diversify the customer base for venison even further. Countries such as Australia have become significant markets, especially small good manufacturers. There is also now a push into high-end restaurants in Asia. However, as supplies tighten, some of the customers will drop out because they are highly price sensitive for ingredients for products such as salami. These markets should really be considered 'disposal' markets for clearing surplus product.

Most of New Zealand's venison is still exported to the major market of Western Europe (including Scandinavia) taking approximately 80% of the total export volume (down from more than 90% in 2000-01 due to increases in volume and market diversification to manage this additional volume). Germany was and still is New Zealand's largest single market as venison is an important part of traditional German autumn and winter cuisine. Germany imported 20,000t in 2003 and sources venison from a number of countries such as Poland, the Czech Republic and Hungary. Other major European markets include Belgium, Sweden, France, the Netherlands, Austria and Switzerland.

European game meat wholesalers

Europeans typically consume New Zealand venison during the traditional game season, from October to December, with some further consumption at Easter. Most venison is consumed outside of the household, thus venison is largely a food service item. Venison is eaten in restaurants, but it appears that most venison sold in Europe (Germany in particular) is eaten in places like workplace canteens in the period leading up to Christmas. Also, a considerable amount of NZ venison is used as an ingredient for the production of salamis and sausages. The consumption of venison through these traditional channels is fairly stable between years and although the market share of Germany has declined a little, the total volume consumed has remained relatively constant.

The customer for NZ exporters is the game traders or wholesalers. These companies are typically large, and have long histories in the venison and game meat markets. They are perceived as having been very successful at controlling the market and therefore have determined prices to NZ exporters, and farmers. Beverland (2005) states that here NZ venison sellers face a market with strong buyers, high product substitution, little means of differentiation, low barriers of entry (competitors usually shoot deer in the wild) and high competitive rivalry (driven by a highly seasonal market); after 20 years in Germany, New Zealand venison in 2005 had achieved a brand awareness level of less than 3%.

Some industry participants stated that German wholesalers have always maintained that they were doing the New Zealand industry a favour by mixing other game meats with New Zealand venison. They imply that deer shot in the Black Forest (and in other European forests) is superior to New Zealand venison. This proposition could never be tested and led to a suspicion amongst these New Zealand processors that this has been used to keep New Zealand venison prices down. This however is hard to prove as over time prices received from wholesalers have been better than retailers.

There is a high degree of maturity in the game industry with a sophisticated customer base and distribution channels. In the early days of venison trading NZ farmer/hunters were game recovery people selling frozen primal cuts -forequarters, middles and legs - as a commodity. As the NZ production systems evolved exporters have been able to push markets to accept an improved product with 90% further processed (compared to 90% primal cuts).

The value proposition has become consistent quality and country of origin as well as availability of product; in time, in full, to specification to meet the seasonal demand. However this market is a limited size, 3-400,000 carcasses were what was required. Supply above or below that produced great fluctuations in price. It also requires product to be stored as the seasonal kill in NZ, driven by declining pasture growth rates in the autumn, can be up to 8 months before the seasonal (October-December) demand for product.

Venison consumers in the US

Consumers in the US are largely unfamiliar with venison because there is less of a h unting tradition. However, venison has a bad reputation in the US because of the

association with hunting. The Bambi factor is not a big issue, but hunted meat is usually frozen, has an unpleasant taste and can be tough. Because of this image, US consumers do not typically recognise the quality of the NZ venison product. Similarly, the dark colour of the meat can be a problem when entering new markets – customers and consumers are not used to game (darker) meats. So the focus when entering this non-traditional market was on chefs with a branded product to ensure the delivery of healthy, lean meat cooked right.

The target was initially on the 'ladies who lunch' set in the eastern states if the US who wanted red meat but were lighter eaters, they wanted to be indulgent eaters by having a sensible main followed by a dessert. The aim was to deliver this through a 'champagne' model rather than a 'Coca Cola' model, that is with multiple suppliers who all adhere to strict quality and business guidelines within the brand.

European Supermarket Retailers

Venison has remained largely a food service product because it is a delicacy – is it difficult to grow demand for a delicacy; and because it is usually too expensive for selling through retail channels – the retail sector is highly price sensitive. However, there is an increasing amount of venison being cooked and consumed at home.

Recent market research carried out by DINZ (2004) provided some further insights into the European consumers. DINZ found that the frequent users of venison are just two percent of the market; there are 29 percent occasional users with 69 percent never eating venison. Those people not eating venison gave a number of reasons:

- Venison is too expensive
- It is difficult to prepare
- Dislike the taste
- Reservations concerning its nutritional value
- Consider it to be seasonal and therefore do not look for it

However, half of the sample surveyed by DINZ admitted to never having tried venison. These potential consumers are unprepared to buy an expensive meat product that they do not know how to cook.

The venison consumer in Europe is described as:

- Typically 40 to 49 years old
- Have smaller household and greater disposable income
- Their older children are at an age where their food likes and dislikes no longer influence purchases
- They cook more often and enjoy food preparation
- They have more time to cook

- They are adventurous and innovative with new recipes and ingredients

DINZ describes its core retail consumer in Europe as:

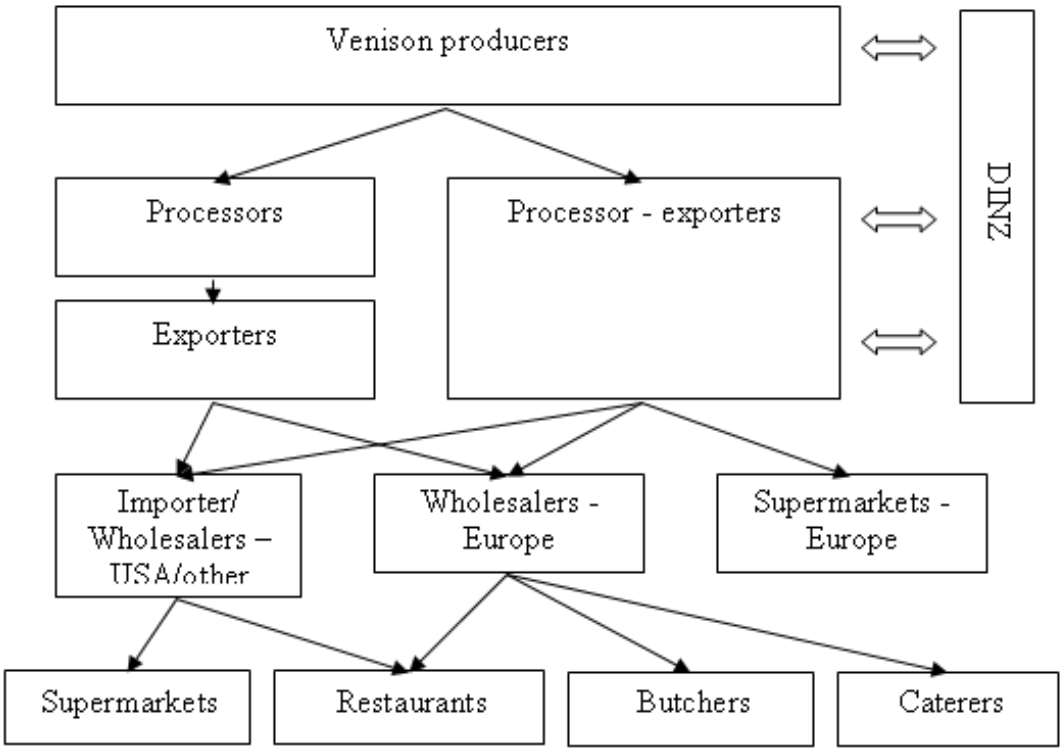
"Thirty to sixty years old, affluent. They have a link with tradition. They enjoy cooking and entertaining at home and consider themselves something of a home gourmet. They are not afraid to try new things"

The GIB (1998) described the features of New Zealand venison as being safe, healthy, convenient, natural and adventurous. These features are very much part of the value proposition for these 'worried wealthy' and 'health and fitness elderly' consumer groups.

The customer for NZ exporters here is the retailer who are very price sensitive, who require good justification for giving venison chiller space instead of other meats and often require some exclusivity of product.

The Venison demand chain

The diagram below, presenting the venison demand chain in more detail, depicts the players in the current market.



3 Operating environment

The environment that the venison industry operates in is fundamental to its performance. The success of venison exports depends not only on the choices of deer farmers, meat processors, exporters and DINZ but also on the environment in which they operate. It is therefore appropriate to undertake an examination of this operating environment.

The operating environment is made up of a number of dimensions – political, economic, social and technology. How these operating factors have changed over time will provide a basis to explore how the New Zealand venison industry has evolved. It will also provide an insight into how the various conditions have influenced the industry's structure and performance along the venison value chain.

Political

The New Zealand government has acted to facilitate the emergence and development of the venison industry. The first of such facilitating legislation was the Noxious Animal in Captivity Act, passed in 1969. This meant that deer were no longer classified as feral animals, and Deer Farming Regulations were introduced providing for licensing of deer farms, subject to certain conditions. The first license to farm deer was issued in 1970.

Tax Reforms

Despite the largely positive role the government has had in facilitating the development of the venison industry, it has been responsible for contributing to the boom-bust cycle within the sector. The introduction of tax incentives in the 1970s encouraged speculation, and effectively destabilised the industry. Numerous entrepreneurs entered the industry, which pushed up the price of live animals. As described by Yerex (1982), the Inland Revenue Department (IRD) permitted those buying deer to adopt "standard values" equivalent to sheep and cattle. This meant that along with other livestock farmers they were able to write off initial high capital costs of livestock and farm development against their income, in effect, allowing tax write-downs of up to 50%. This was significant for deer farming because it had much higher capital requirements than sheep and cattle farming.

As a result, live deer prices increased dramatically – more than could ever be recouped from the production of velvet or venison. The numbers of people involved in live captures in 1979 quadrupled. The boom generated demand for new helicopters, the leasing of large cargo planes to move deer from one end of New Zealand to another, and deer for sale of any quality. When the IRD signalled that the write-down would be withdrawn in late 1979, coupled with the disappearance of Republic of Korean velvet buyers, prices tumbled. The new livestock standard value system introduced in 1986 brought standard value closer to market values (MAF, 1989).

International Trade Regulations

Several exporters suggested that trade regulations in Europe had been beneficial for New Zealand venison exporters. All participants within the industry appreciate the value of being able to export venison tariff-free to Europe because of its game meat status. However, the high tariff levels on other meats such as beef and lamb have kept the average price of meat in Europe higher than might be the case in a completely tariff-free trade environment.

Economic: Influence of economic events and other crises

Since 1980, venison prices have fluctuated greatly. The price was increasing until the Chernobyl incident in 1987, which led to considerable consumer resistance to game meat regardless of its source. In 1987, 600-700 tonnes of New Zealand venison were held in stock because of the slowdown in demand, Jarvis (1988).

The collapse of Fortex, which had a large deer processing facility, in 1994 sent a flood of venison on to the market at low prices.

In 2001, the discovery of Creutzfeldt-Jakob disease in Europe saw venison prices markedly increase because some consumers stopped eating beef and switched to other meats. Unfortunately, wholesalers miscalculated the amount of venison that would be required for the market. The large surplus of game meat on European markets meant that prices then fell dramatically.

The recovery from this depression has been hindered by the slow growth in European economies, especially in Germany the key market. The introduction of the Euro also contributed to the slow recovery because the price of goods and services increased, but incomes remained unchanged causing a more conservative approach to spending, and therefore, people have tended to eat out less.

Within New Zealand the economic liberalisation that occurred after 1984 had a range of impacts on the New Zealand economy. As venison is exported the changes in monetary and exchange rate policies had a direct impact on the industry. Taxation reforms changed incentives for industry participants and the deregulation of the agricultural services changed the way farmers and exporters accessed these services.

Monetary and exchange rate policies

In 1982 a fixed exchange rate was reintroduced and a freeze on wages and prices and controls on interest rates were put into place. This gave the industry temporary protection against exchange rate instability and price increases in domestic input prices – including wages. However, this ended when the price and wage freezes were lifted in 1984. In July that same year, following a major capital outflow, the newly elected government undertook a currency devaluation of 20 per cent against a basket of currencies of major trading partners. In the following year the New Zealand dollar was floated and the Reserve Bank role changed to control of monetary policy.

The value of the NZ dollar rose dramatically after 1987 and this impacted negatively on the already depressed venison industry – as it made the price of venison in

overseas markets relatively more expensive and therefore decreased demand for them. The Reserve Bank's inflation reducing policies caused interest rated to rise to extreme levels by 1988. At the same time farm land values fell leading to an equity crisis for many farmers.

Deregulation of Primary Industries

As part of New Zealand's economic liberalisation that occurred after 1984 the agricultural and horticultural sectors were deregulated. These reforms included:

- the removal of input subsidies on a range of inputs – including fertiliser and water supply;
- some cost recovery of advisory, research, animal health and quarantine services; and
- full cost recovery of on inspection services by MAF Quality Management

The deregulation led to increased competition as new entrants in servicing and exporting sought to establish market footholds (Campbell et al 1997).

Social

It is important to identify the changes in the perspectives, views and opinions of society and how and if they have had an impact on the venison industry. The term society can include NZ citizens and consumers who may have quite tangible connections with the deer industry as well as overseas societies and consumers with less tangible but no less powerful views on how the venison industry should be run.

As venison is traded as game meat there is an expectation/belief that the deer are run in 'the wild'. Although in New Zealand and elsewhere deer are farmed this has not diluted that belief. There has been no advantage therefore in differentiating venison into 'natural' or organic product.

The pressure from society to ensure animal welfare is not compromised by farming practices is not however restricted to domesticated/farmed animals. The strongest lobby has been related to the removal of deer velvet (the immature antler) from stags; in the UK this is not an accepted practice, most UK supermarkets selling NZ venison now require the meat to have come from farms that do not run velvet stag herds on their farms. Within NZ the practice of harvesting has come under scrutiny and legislation was passed to limit who could do so and how it was done. Developments in industry quality assurance programmes have included various aspects of animal welfare including a transport code of practice to minimise stress of animals in transit.

Technology

In the early stages of the deer industry when exports were based on feral deer, helicopters were widely used as a shooting platform. Later, they were a primary tool for live deer recovery to build the farmed herd. Helicopters offered unparalleled

access to the steep South Island backcountry where deer thrived (Nixon & Duncan, 2004).

New Zealand researchers had a number of advantages in their quest to domesticate deer. Important, was the ability to apply the knowledge and skills already learnt from the management of sheep and dairy farming. Techniques adapted from sheep farming such as mating management, weaning, and grazing control were adopted readily in deer farming. Agriculture research stations also had the infrastructure and skills to develop world's best practice. This meant that the capacity and infrastructure was in place to deal with deer farming problems as they arose. The ability to leverage existing skills from other livestock industries was a significant advantage for the New Zealand industry and pivotal in the development phase of deer farming.

Researchers such as Professor Coop (at Lincoln) and Dr Ken Drew (Invermay) led significant research programmes to develop management practices considering all aspects such as animal behaviour, reproduction, yard building, feed requirements, and best practice deer handling techniques (Nixon & Duncan, 2004). These programmes have continued to be built on by the deer team at AgResearch Invermay. The establishment of DEEResearch and VARNZ improved the use of funds for research. Top farmers readily took up on-farm innovations.

Genetic gain over the last 30 years has been considerable – velvet weight has doubled and hind liveweights have increased from 85kg to 112kg average. AI and ET have also been used. However progress towards improved venison, both its quantity and quality, has been hampered by the focus on the other deer product, velvet, by many stud farms. It is not clear whether a strong correlation exists between the weight and type of antler a stag produces and the growth rate and quality of venison of its progeny. Breeding objectives for improved venison production were not apparent in most breeding stag sale catalogues. This preference for selection for velvet has persisted despite very volatile and falling velvet prices over the last 20 years.

Frustration with slow improvement in birth weight and growth rates in the Red Deer and the need to have deer grown out and finished in time for the European market led to many farmers putting Wapiti (Elk) stags across Red Deer hinds. This practice is now less common as it led to a drop in the reproductive performance and fertility of the herds. In recent years the dairy industry based LIC Ltd has introduced a new product to the deer industry, Deer Select, and there is now a strong interest in recording in an objective manner. It is too early to know whether this will encourage stud farmers away from their fascination of the multiple pointed antler towards the identification of the best venison producing sires.

One on-farm technology that is somewhat controversial is wintering under lights to beat the deer's photoperiodic growth has helped achieve higher productivity levels on farm. Some processors/exporters are against the practice because it does not fit the image/brand of being natural/wild across all their markets. Animal declaration forms include what they have been fed. Deer can be housed during winter, but not under lights and then need to be outside for 6 weeks. This practice is not documented, but is agreed with good suppliers in order to keep production systems as natural as possible. This highlights the conflict between achieving heavier weaners earlier as required by the market to boost productivity and the

market/product position. Thus, genetic improvement is the key tool to manipulate seasonality now.

In the processing sector, there has been little venison-focused development because of the relatively small size of the overall industry. The technologies that have been adopted, such as chilled vacuum packaging and inverted carcass dressing have typically been developed for other species such as lamb. The development of chilled meat packaging, has enabled fresh, chilled venison to be shipped to export markets. Chilled product earns a premium over frozen product because of its freshness and flexibility.

Deer slaughter plants are required to be separate from those plants used for other species such as sheep and beef because of the game position of venison. To overcome some of the scale and scope challenges this posed processors, Fortex had a back-to-back operation where a sheep and lamb slaughtering facility was side-by-side with a deer slaughtering facility. Both of these facilities shared a sorting and packaging room. This was important for a low throughput product such as venison because it could be packed by the same staff who were primarily packing lamb, improving economies of scale and scope (Nixon & Duncan, 2004).

4 Industry Structure

THIS SECTION BEGINS THE EXPLORATION of the structure, conduct and performance links in the venison industry by reviewing the key structural features of the sector. It examines the industry's response to changes in the operating environment by looking at how organizations and social capital within the industry have evolved. Of particular interest in this section is whether the questions posed by Parnell (2006) can be answered. His questions were:

1. what limitations do industry structure and other factors place on strategic options – most notably the level of market control an organization can exhibit? Control, he states, is desirable for all organisations and essential for those unable to deliver a strong value proposition

2. what valuable resources possessed by the organization can foster an improved strategic position and how do those resources influence the success or failure of the strategy pursued by the firm? A firm's collection of resources creates the context for the value proposition it can deliver.

Production sector

There are now an estimated 3,800 farms in New Zealand with deer. These farms range in size from smaller lifestyle properties to extensive stations. Generally deer are farmed as part of a diversified livestock portfolio with other species including sheep and cattle. There are approximately 1.7 million deer farmed in New Zealand (est. as at 30 June 2006) - half the world's farmed deer population. Split roughly 40 percent in the North Island and 60 percent in the South Island, there are an estimated 1 million female deer ('hinds' or 'cows') and 700,000 males ('stags' or 'bulls') (www.deernz.org).

There is a mismatch between the most cost efficient time to slaughter deer and market demand. In a pastoral system seasonality of supply reflects pasture growth rates so farmers aim to run the minimum number of stock in the winter months. There can be up to 8 months between when stock are slaughtered and the peak demand from the Europe game traders. This not only causes complications with inventory and requires a higher percentage of the product to be sold frozen rather than chilled but it also creates pricing inefficiencies as prices to farmers tend to be set on prices received 4 months previously. The implications to off-farm players of such seasonal supply has not been clearly related via price to the producers as price signals get distorted by so many other factors like exchange rate.

More importantly there is a biological lag between when producers get a price signal and when they can respond with increased or decreased supply of product. The lag is slightly less than that of the beef industry as although retained weaner hinds take two years to produce offspring the fawns born take less time to reach slaughter weights. The resultant over and undersupply of product that such a lag creates only

further exacerbates price volatility which, in turn, causes further confusion for the producers.

Landcorp Farming Ltd was established in 1987 as a State Owned Enterprise (Landcorp, 2007a). It is now the largest agricultural enterprise in New Zealand, farming 1.6 million stock units on 108 properties with a total land area of 370,738 hectares (including the 180,486 ha lease of New Zealand's largest farm – Molesworth Station). Over the last twenty years it has focused on strengthening its business and income base. This has been done through a philosophy of continuous improvement in staff, nutrition, plant and animal genetics and an active property upgrading and rationalisation programme. Recently there has been a development plan in place to increase deer numbers, and raise the performance levels. Historically, sheep and beef cattle have been Landcorp's main contributors of revenues. But Landcorp has been gradually increasing its revenue from dairy and deer. It now runs 8% of the national deer herd with 65,000 breeding hinds and contributes 10% of the venison kill. (www.landcorp.co.nz).

The Genetics group within Landcorp's Genetics and Nutrition Unit is responsible for the operational design, technical integrity and integration of some 9 different sire breeding programmes in sheep, beef cattle and deer. This programme aimed to genetically improve profit-earning ability of each female wintered on Landcorp's commercial farms. Landcorp's Red Deer programme is a dam line breeding programme and comprises of a stabilised cross of Eastern European Red and high merit Landcorp NZ Red animals. Traits of interest include female fertility, weaning ability and growth. All animals are DNA profiled for parent identification. Making extensive use of AI, it was the first applied stag breeding programme to conduct technically sound across-herd sire genetic evaluations. The Landcorp Wapiti breeding programme was established several years ago from a stabilised cross between Canadian Elk and NZ Wapiti hinds. Selection in this sire line programme is primarily for growth and in an industry-first move, carcass merit through the use of CT scanning (experimental at this stage) (Landcorp, 2007b).

Processing sector

There are now approximately 16 Deer Slaughter Premises (DSP), which are evenly distributed throughout New Zealand. DSP's are facilities that are designed for the slaughter and processing of deer only. The main purpose of this is so that farmed deer can still be classified as game, whereas if they were processed through conventional meat works they would be classified as "stock". Export of venison to the EEC would then attract an import levy, whereas no levy is payable if venison is classified as a game meat. There are obvious marketing advantages to classifying deer meat as game, and this has led to a number of DSP's being established throughout the country.

DSP's were initally small in size, and were designed to keep capital costs and hence killing charges low. They typically used the latest technology, and had a highly efficient labour force. Labour was generally employed on a contract basis, and got paid in relation to the number of animals killed and processed per unit time. The objective of this was to have greater industrial efficiency, and to maximise the returns to both exporter and deer farmer.

Since the early 1980s, a large number of firms have entered and exited the deer industry. Those that remain are either very large or very small. While large companies rely on scale and scope, smaller companies have survived because they have been able to be more innovative, flexible and responsive in the market and establish lasting relationships with selected customers.

It was well understood by the industry that to achieve better returns in the market they would require critical mass in the market. The industry attempted to do this by setting up Venison New Zealand This was an attempt to bring producers of venison together in a co-operative and co-ordinated fashion. Unfortunately, this approach coincided with large increases in the venison kill and a lack of appreciation of the costs associated with forward integration, or of the financial effort required to sustain a collaborative approach to marketing venison (Nixon & Duncan, 2004).

After the collapse of Venison New Zealand and Fortex (for reasons other than venison processing) the bigger meat companies gradually made their presence felt in the industry. As venison volumes increased, the bigger meat processing companies such as PPCS, Alliance, Richmond, and AFFCO began moving into the venison market. They were able to pick up the assets of the smaller companies at low prices and use their own processing and marketing channels to develop venison markets. The remaining smaller exporters such as Duncans and Mountain River have close relationships with specialist processors rather than owning those assets themselves.

As outlined by Nixon & Duncan (2004) second movers with scale have many advantages over smaller firms in a commodity market. This includes the use of economies of scale and scope by combining the much bigger lamb processing volumes with venison to reduce transport and marketing costs. Furthermore, with larger volumes the venison processors are in a better position to bargain with large wholesalers/retailers. They also have the ability to better handle the inventory, created by the seasonality mismatch between supply and demand, as they have the storage capacity and working capital available to manage this.

Venison Industry Bodies

Three main industry organisations have played key roles in shaping the venison industry. These bodies have typically represented farmers or processors/exporters and farmers.

New Zealand Deer Farmers Association

The NZ Deer Farmers Association (NZDFA) was formed in 1975. Its objectives were to act in the interest of all deer farmers. Originally, it was funded through a voluntary subscription paid by interested deer farmers and by others associated with the industry. However, it became clear over the years that only about half of New Zealand's 4,500 deer farmers belonged to the NZDFA. A feeling developed that whilst all deer farmers benefited from the activities of the NZDFA, only a portion was bearing the actual costs. Also, the NZDFA was having problems funding its activities. This was resolved by the imposition of a compulsory levy in 1995 under the Commodity Levies Act 1990.

Some of the significant achievements of the NZDFA are listed below:

- Disease control – TB
- Production research
- Strong political lobby
- Taxation reform
- Formation of GIB
- Formation of deer slaughter premises (DSP)
- Disease control
- Velvetting Code of Conduct
- Spread of information
- Conferences
- Publications
- Road Show

Together with the Deer Branch of the New Zealand Veterinary Association, the NZDFA was instrumental in developing a scheme for the control of TB in farmed deer. Initially, this was a voluntary scheme but it is now compulsory and is also very effective. The number of animal TB reactors is now declining.

The NZDFA had a long interest in stimulating production research in the deer industry. However, they had problems raising finance to support the research they would have liked to see done, but this has been solved to some extent with the advent of the Commodity Levy. The NZDFA has formed a joint venture with AgResearch known as DeeResearch. DeeResearch now calls for research grant applications once per year, and all of the items funded are of direct relevance to deer farming, with some of the projects being done on commercial deer farms.

Over the years, the NZDFA was a very strong and effective political lobby. It was instrumental in getting taxation reform that benefited deer farmers. The NZDFA also lobbied for the formation of the GIB, and for the development of DSP's. Together with the Deer Branch of the New Zealand Veterinary Association, the NZDFA has played a role in developing strategies for the control of disease in farmed deer, especially during the early years of deer farming. The NZDFA and the Deer Branch of the New Zealand Veterinary Association also worked together to develop the Code of Conduct for velvet antler removal. This is now legal in New Zealand, and transfers control of the velvetting operation from the deer farmer to the veterinary profession.

The NZDFA has also been instrumental in keeping deer farmers up-to-date with developments in their industry. One of the means of doing this is their annual conference, which is held alternatively in the North Island and the South Island. The NZDFA kept its members up-to-date using publications, of which the best example is the two-monthly production of the magazine "Stagline".

The deer industry and New Zealand government attempted to control poaching of deer through the Wild Animal Control Act (1977). It made the provision that all deer carcasses must have their “head on” when they went to the game packinghouse. This enabled stock to be ear marked and allowed for registration of deer. This greatly improved the confidence of overseas buyers. This was illustrated by Yerex (2001), quoting an unnamed British game exporter: ‘New Zealand, the country whose game

exports are expanding rapidly, is also the only country with regulations controlling the processing of game'.

New Zealand Game Industry Board

The NZ Game Industry Board (NZGIB) was formed by the Primary Producers Marketing Act Regulations of 1985. It was a statutory Government body, and was empowered to collect levies from all deer farmers. This gave the Board and annual income of $4.5 million for the 1999/2000 year. The GIB never had nor sought single-desk seller status (Beverland, 2005). There was proportional representation on the Board from the farming, exporting and processing sectors of the industry plus one government member, eleven members in all.

The Game Industry Board was charged with "overseeing the orderly development of the deer industry". This was seen as developing a marketing plan for the deer industry, and the essential components of this are set out below:

- Market Research – survey of present and future markets to determine what the market wants and when and feed this back to develop production systems to supply when the market required. The basis of this is so that the deer industry can be market-led instead of production driven.

- Branding Marketing Strategy (Venison)

    - ZEAL – a certification trademark for established markets. The purpose of this was to differentiate New Zealand farm-produced venison from feral venison and from farmed venison produced by other countries.

    - CERVENA – an appellation strategy to develop new markets. Currently, Cervena is being promoted in the USA and Canada, and in New Zealand and Australia. Cervena is marketed as young, tender New Zealand farm-raised venison, produced in a clean, green, nuclear-free environment. It is promoted as a high value product to top restaurants and hotels. This is designed to return high prices to the deer producer. It is important to note that Cervena is not a commodity; many ask why Cervena cannot be found in supermarkets, and the reason for this is that a supermarket is a high volume, low price outlet. In contrast, the deer industry saw itself especially in the US market as a relatively low volume, high price industry.

- Quality Assurance Programme for deer farms, the deer transport industry and deer slaughter premises to ensure quality of product leaving the deer farm, to ensure minimum damage during transport, and to ensure high quality during deer slaughter and processing.

Deer Industry New Zealand

Towards the end of 2001, NZ deer farmers decided to combine the NZDFA and the NZGIB, as a means of saving costs, this took place during 2002. Individual branches of the NZDFA still retained their identity and functions throughout NZ, but the

NZDFA Head Office and Council were merged into the NZGIB to form Deer Industry New Zealand (DINZ). DINZ also operate DeeResearch.

DINZ is responsible to all industry stakeholders and undertakes a range of programmes on behalf of the entire industry. It does not buy or sell deer products, and refers any trade enquiries directly to relevant processors or exporters. DINZ's main functions and activities are:

- Promotion of New Zealand venison and velvet in New Zealand and export markets, through Cervena and Standards Certified New Zealand Deer Velvet, and other marketing programmes.

- Co-ordination and administration of industry quality assurance programmes on-farm, in processing plants, for stock and station agents, transport operators and velveting standards.

- Management of research on behalf of the deer industry including research to support international trade negotiations to open and/or maintain market access for deer products; improve farming systems and on-farm management practices; determine velvet-based health product composition and efficacy and develop quality and food safety standards for venison and velvet.

- Assistance of the Ministry of Foreign Affairs and Trade and the Ministry of Agriculture and Forestry with market access negotiations.

Under its regulations, DINZ is funded by a compulsory levy which is collected from all farmers on venison and velvet at the first point of sale.

For the year commencing on 1 October 2004, the levy was set at the following levels:

- Venison: 10 cents per kg or 7 cents per kg for fallow venison

- Velvet: $3.50 per kg or $0.50 per kg for fallow velvet. No levy is payable on velvet with a purchase price of less than $15 per kg.

The deer industry funds its commitment to the Animal Health Board through an additional levy of 6.2 cents per kg of venison and 62 cents per kg of velvet. The Animal Health Board is a statutory organisation responsible for the National Pest Management Strategy, with the primary goal of eradicating TB from New Zealand.

Social capital in the Venison industry

As outlined in the AREN Kiwifruit report (2007) social capital refers to the value created by a person's or firm's relationships with other people, firms and organisations. Social capital does not have a formal definition as such. However, according to Putman social capital refers to the collective value of all social networks (Putnam 2000). In essence it is the collective resources built up through social interaction. It includes trust, co-operative behaviour, helpful networks, and willingness to participate in issues of common concern.

Although the concept of social capital cannot be formally measured some broad assumptions can be made on the extent of social capital within the venison industry and therefore how it has enhanced conduct and performance.

The early years of deer farming were led by the pioneers of the industry. They included people involved in the live capture of deer, characterized by a 'devil who dares' attitude to life, many of whom had also been involved in aerial deer hunting. As deer values increased the industry began to attract farming entrepreneurs and city investors keen to make use of the tax advantages available. The status of the deer industry changed as it included more people with wealth (and high taxable incomes) and for a while was seen as being quite elitist.

Specialist deer farmers were then either large farmers (South Island high country of North Island hill country stations) or small lifestyle blocks. As the industry became more established it then became quite common to find small areas fenced for deer farming on larger sheep and beef cattle farms throughout New Zealand. The newness of the industry meant that individual farmers, investors and deer slaughter plant (DSP) owners and exporters had the opportunity to develop important relationships and networks with each other. They often described themselves as people at the leading edge of a new industry, not a part of the then termed 'sunset' industries of sheep and beef. There was an enthusiasm and hunger for new ideas from people within the industry.

As the industry matured the tax breaks were removed and it began to experience external shocks and price volatility, most of the DSPs were taken over by the established sheep and beef meat processors, and the elitist tag began to wear thin. Despite the changes and the drop in price and deer numbers farmed the social capital in the deer industry continues to be distinctive.

Venison Industry Five Forces Analysis

In discussion with an industry panel at the conclusion of this research their response to five forces analysis outlined in the table below was to reinforce how whether you are a price taker or a price maker was a factor of the supply volume and processing capacity. They confirmed the impact of velvet price on the supply of stock to the processor and how difficult it was to predict. They also disagreed with the 'German cartel' inference and stated that while that may have been a feature in the past it was not so now.

Some of the threats they saw to market stability included excess processing capacity enabling a new exporter to enter the market. They, with or without new retailers, would threaten existing relationships in the supply chain and have an impact on price as supply of stock diminishes.

The strongest aspect of their trade in venison now, in comparison with previous years, is the focus on country of origin.

Table 4.1: Five forces analysis for the producers, processors/exporters and importers/retailers in the venison industry.

	Producers	Processors Exporters	Importers/Retailers
Scale	Small	Initially small, second-movers (processor-exporters) are much larger	Large in Europe, Typically smaller in US and other markets
Availability of Substitutes	Other livestock readily available. Deer farming expanding in other countries.	Competes with other proteins to achieve price points on menus and in supermarkets. Wild-shot venison/other game is key substitute available from Eastern Europe	NZ only secure and safe source of high quality farmed venison.
Power of Customers	Control access to markets and processing space. High concentration therefore few options and price takers	Customers know relative levels of inventory (processor-exporters sell down stored/frozen inventory). Set prices based upon own country's economic situation.	Price they can pay is dictated by price points on menus and in supermarkets.
Power of Suppliers	Stud breeders control genetics available to farmers, and they have focussed largely on velvet production and not venison or reproduction.	Control supply of live deer for slaughter therefore affects in-plant efficiencies and long-run volumes, and subsequently the ability to plan.	Some processor-exporters supply a range of meat products (lamb) therefore represent large share of supply base for these customers – other exporters are much smaller. Concentration of NZ processor-exporter sector has also increased this power.
Degree of Rivalry	Rivalry emerges indirectly when competing for processing space.	Highly competitive for deer to process, and competitive for staff. In-market competition is high, but limited through cooperation overseas by DINZ.	Concentration amongst importers has reduced this. German wholesalers communicate amongst themselves regarding price.
Threat of potential entrants	Few barriers to entry – high capital cost of fencing farm. Not significant threat to incumbents.	Limited threat-highly specific assets (deer slaughter premises) and long-term relationships established with customers.	Minimal threat – these businesses are built on long-term relationships.

5 *Venison Supply*

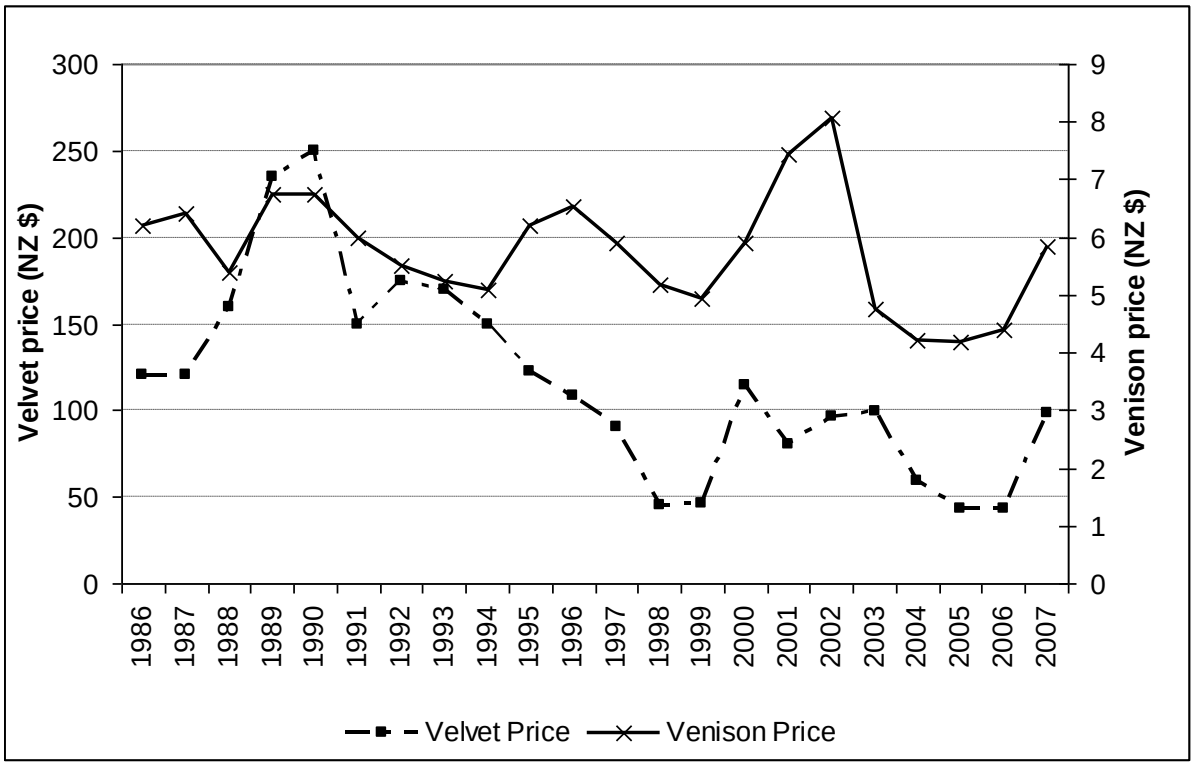
DRAWING ON THE PREVIOUS EXAMINATION OF the venison industry this section considers factors influencing the supply of venison. While changing operating environment, industry structures and demand for venison all influence supply so also does industry level strategy, the choices made by managers throughout the value chain to the information they receive.

Factors influencing supply

Velvet Prices

As well as the number of factors identified in previous sections that have influenced the growth of the deer industry another important factor that influenced and continues to affect supply of deer to slaughter is the price of deer velvet (Figure 5.1). When prices are strong farmers retain or purchase male offspring and build up their velvet herds. The stags can produce good quality and quantity of velvet for up to 10 years at minimal cost of inputs.

Figure 5.1: Price schedules of venison and velvet from 1986-2007 (Source www.maf.govt.nz)



When velvet prices fall as in 1997 and 1998 the disposal of velvet herds increases the supply of both young stags that are no longer being retained and older stags for slaughter. Such an increase in supply can have a negative effect on venison prices. Similarly, as in 1999, an increase in velvet price can result in stags held on farm and supply of animals for slaughter decreasing with a resultant positive effect on venison prices. Velvet prices can influence therefore not only herd size but also herd composition and, in time, the quality and quantity of venison sold.

Forecasting supply is complex. Independent of tax incentives and the inevitable retention and disposal of stock in response to venison price therefore is the impact of velvet price on both herd size and composition.

Another factor that can influence herd size is alternative uses of land. Land developed for deer farming can readily be used for all other pastoral enterprises and, if the contour is right, for cropping. The relative profitability and volatility of other enterprises as well as confidence in the structure and direction of other industries therefore will determine whether the deer enterprise is retained on the farm.

Counter-cyclical investment in agriculture is not common so current prices often strongly influence decisions on whether enterprises are retained or disposed of. A notable exception to this has been the government owned farm company Landcorp Farming Ltd that has recently increased its deer herd at a time of depressed market prices so were able to purchase deer from those deciding to exit the industry.

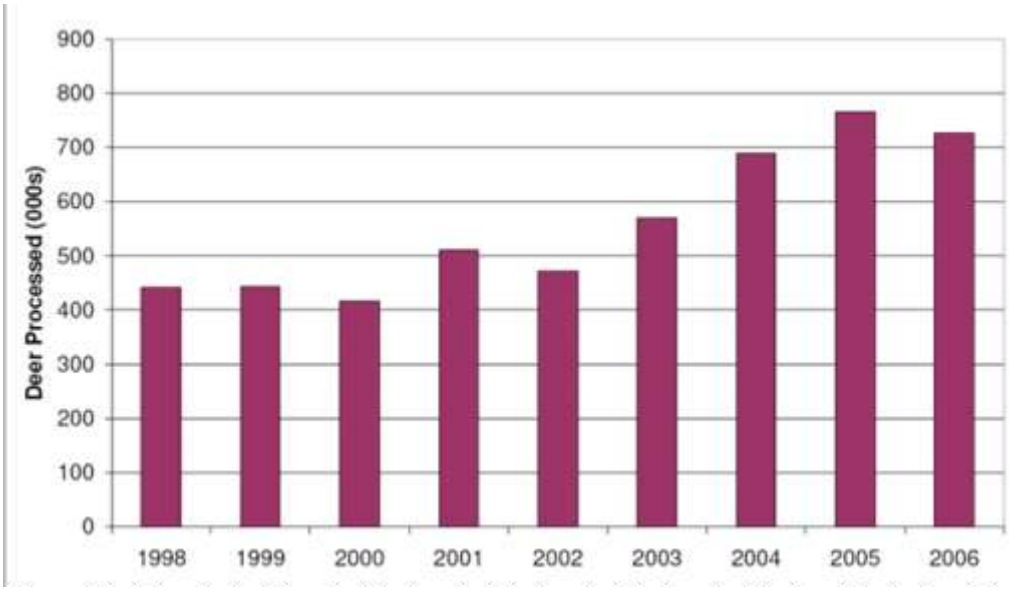
Market Volume & Value

High prices offered in the West German market during the 1970s were instrumental in developing the world venison trade. However from 1980 prices steadily fell (Figure 5.1), this was exacerbated in 1987 by the Chernobyl disaster, which led to considerable consumer resistance to game meat (600-700 tonnes of New Zealand venison were held in stock because of the slowdown in demand) and in 1990 due to a sudden increase in supply from eastern Europe and New Zealand. The downfall of the east European communist regimes, and the subsequent demand for hard currency, increased numbers of East European sellers which led to lower prices. In 1992 with reduced supplies from eastern Europe venison prices started to firm but the 1993 economic slowdown of Germany, a weakening demand due to health warnings of game offal contamination from heavy metals together with increasing NZ supplies resulted in a sudden fall in price later in that year (Pearse et al, 1994). The collapse of Fortex, which had a large deer processing facility, in 1994 resulted in the dumping of venison on to the market which depressed prices.

In 2001 a price shock occurred. Concerns about BSE in cattle and the outbreak of FMD in Europe resulted in demand for venison firming and venison prices markedly increase (Figure 5.1). The resulting venison prices (in real terms) paid to NZ farmers for the year to June 2002 reached their highest level since 1990 (MAF, 2003). The ramifications of such external shocks (in this case major animal disease) to international meat markets and trade have been huge, they have been major causes of instability that in some cases, like the deer industry, take many years to return to market equilibrium. The OECD-FAO (2007) estimate the return interval to be quite short in poultry markets due to the shorter production cycle but can be up to a decade in beef markets.

In the case of venison it has been reported that the situation was exacerbated by wholesalers miscalculating demand and overstocking 'non-BSE/FMD' product; the resultant large surplus of game meat on European markets meant that prices fell dramatically (to their lowest level in 4 years). Much of the fall was attributed to consumer resistance to high venison prices, falling pork prices, a quicker recovery of demand for beef than anticipated and the slow growth in European economies, especially in Germany. This was further exacerbated by farmers retaining stock (see Figure 5.2) when price was high in 2001 and 2002 then decreasing deer numbers as prices fell and thereby increasing supply -the national deer herd shrank by 33%- (Figure 5.3) onto an already depressed market.

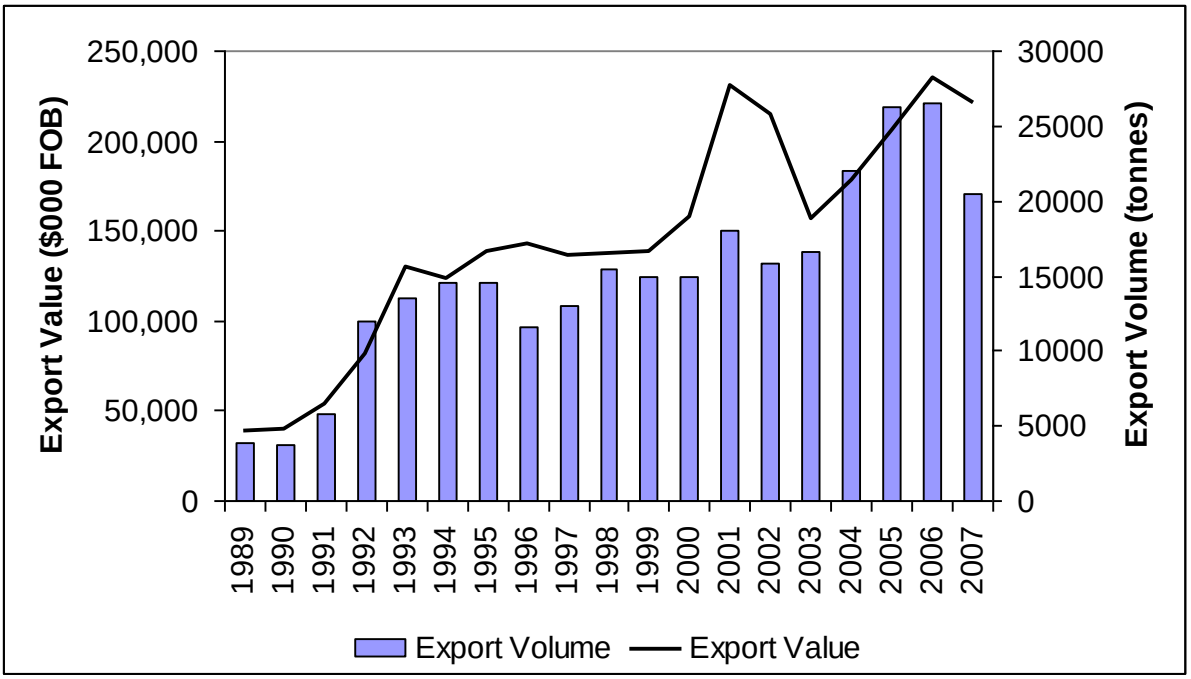
Figure 5.2 : Number of Deer Processed per Annum, 1998-2006



The increase in export value (Figure 5.3) reflects the export volume until 2006 when the export value continues to increase due to improved prices. The estimated numbers for 2007 indicate a further 12% drop in export volume for venison to 23,307 thousand tonnes but an increase of 7% in export value.

Average market prices (FOB, NZ dollars) have been declining since 2001 with an improvement in 2006/07. This decline is strongly related to the 65% increase in supply of venison extending product into less profitable markets and the increasing strength of the NZ dollar relative to some currencies.

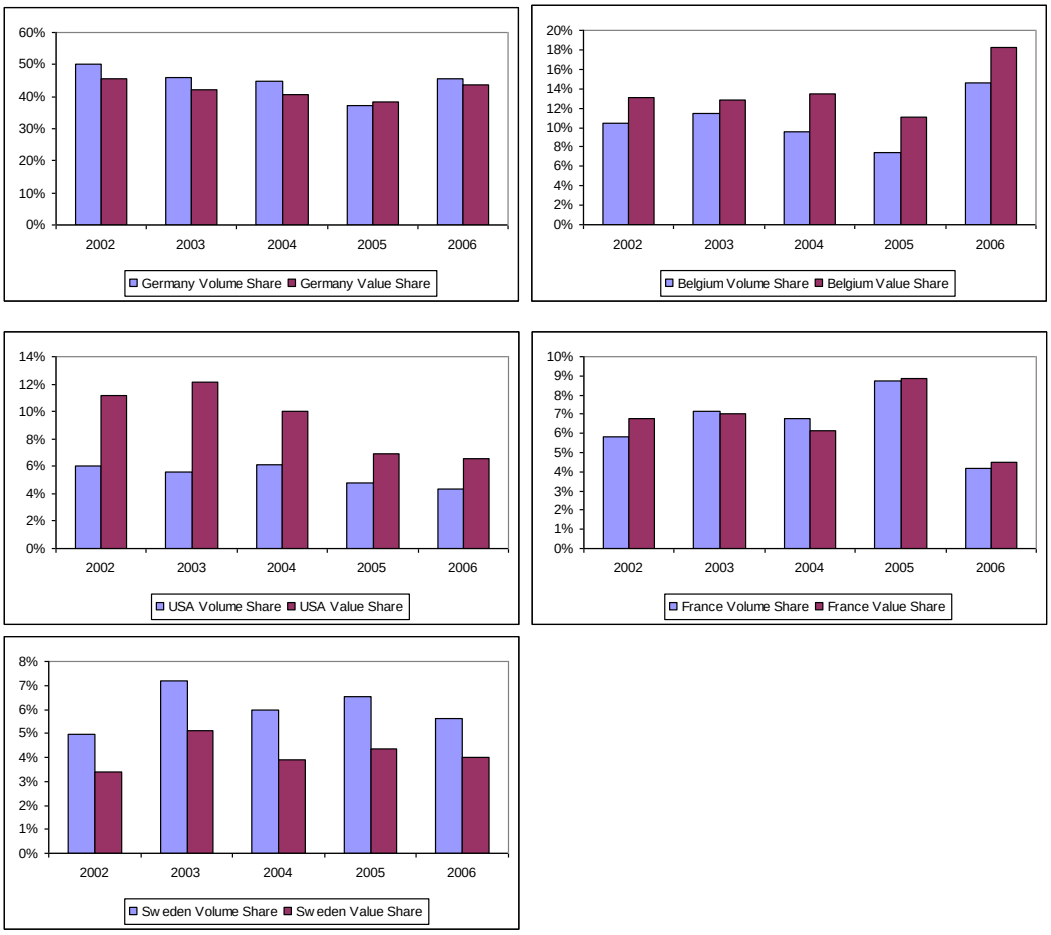
Figure 5.3: Venison export volume and value from 1989-2007 (Source: Deer Industry Annual Reports)



There has been a marked reduction in price across all markets since 2002 with the average price received for venison exported to the USA reducing relatively more than those to other markets.

Figure 5.4 below shows how selected countries have changed share of venison exports by volume and value. Germany has continued to dominate export volumes, and the average price paid for that product is approximately the average price received for all venison exports. The USA market in 2002 and 2003 was worth relatively twice as much as the volume of exports, but this relative difference has fallen significantly, especially in 2005 and 2006.

Figure 5.4: Changes in market volume and value for selected markets from 2002 to 2006. (Source www.maf.govt.nz)



Returns

The farm gate prices reflect this decline in market prices. For many years farmer gross margins from venison have out-performed those from sheep and cattle farming (Pearse et al, 1994) However, in the last four years this has not been the case (Ministry of Agriculture and Forestry, 2000-2006). lLmb prices were at or near record levels in the early 2000s, and beef prices have largely remained above $3.00/kg for much of this time, but as illustrated in Figure 5.1 venison has been through a major price depression.

New Zealand's position as the world's largest producer and exporter of farmed venison means that changes in production have a substantial impact on market returns. The ratio of farm gate price to FOB price has remained relatively consistent over this period at 52-55% with the exception of 2002 when the schedule price spiked in response to BSE and FMD. This spike never materialised in consumer prices. The actual share of FOB price received by producers is higher than reported here because much of the venison exported is boneless.

Table 5.1 below shows some of the key production and price data for 2001-2006. The volume and export value data are from Statistics New Zealand and DINZ while the average farm gate price is from MAF SONZA reports.

Table 5.1: Key production and price data for 2001-06.

	2001	2002	2003	2004	2005	2006
Volume (000 t)	18.4	16.0	17.0	22.6	26.8	26.4
Value FOB ($m)	$250	$206	$156	$182	$210	$235
Ave Market FOB Price ($/kg)	$13.59	$12.88	$9.16	$8.02	$7.86	$8.87
Farm gate price ($/kg cwt)	$7.42	$8.08	$4.85	$4.17	$4.11	$4.80
Farm gate % of FOB[1]	55%	63%	53%	52%	52%	54%
FOB margin over Farm gate[2]	$6.17	$4.80	$4.31	$3.85	$3.75	$4.07

[1] Farm gate price divided by FOB price. Note: this does not consider that much of the venison is exported boneless. Therefore, the ratio of farm gate returns is actually higher than reported.

[2] FOB price minus farm gate price. Note: this does not consider that much of the venison is exported boneless. The amount of boneless venison has also increased over this period. Therefore, the FOB margin over farm gate price is actually less than reported.

The absolute margin between FOB price and farm gate price has held relatively constant over this period, which suggests that the profitability of venison processor-exporters has declined significantly after 2001.

Table 5.2 below shows the profitability of deer farms over the period 2000/01 to 2005/06 based on the MAF model deer farms for the North and South Islands. No allowance is made for farm area and different measures of farm profitability have been used by MAF for each island.

Table 5.2: Deer farm profitability for 2000/01 to 2005/06 (Source: Ministry of Agriculture and Forestry, 2001, 2002, 2003, 2004, 2005, 2006)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
North Island Net Profit before Tax	$93,600	$98,380	$23,640	($6,820)	$3,985	$233
South Island Cash Farm Surplus	$111,000	$145,000	$83,400	$39,710	$26,681	$42,653

Farm profitability is highly correlated with farm gate price, and has therefore declined markedly as prices have fallen. This data together with the data above showing FOB margin over farm gate price suggests that neither producers nor processor-exporters have been generating much profit during 2002-2006.

Strategic Supply Chain Responses

Branding

Originally, New Zealand venison was not differentiated from other game meat sold principally to German wholesalers. The structure of the marketing chain meant that small New Zealand firms dealt with very large food wholesalers in the importing

country. When the trade started, the structure of the industry did not have much impact since demand outstripped supply and export sales grew strongly.

The Chernobyl nuclear accident in 1987 was a demonstration that while commodity selling saves on marketing costs, differentiation has its advantages. After the Chernobyl accident, game meat met considerable consumer resistance. With no way of differentiating New Zealand venison from potentially tainted Eastern European game meat, demand for New Zealand venison was equally affected.

A number of branding strategies have been employed within the venison industry. Some of these have been industry-wide strategies like Cervena™ and Zeal, and the current generic New Zealand Venison branding with country of origin labelling. Others, that are becoming more important as direct links with supermarkets are formed, are exporter-owned.

ZEAL

Cervena™ was not the first attempt at branding by the venison industry. Zeal was introduced in 1991 (www.maf.govt.nz). The Zeal mark was used for established markets such as Europe and for all other non-Cervena markets. The Zeal quality mark was supposed to distinguish quality assurance New Zealand product from competing products. Venison is often considered a traditional product, with a strong association with the hunted or feral venison, served mainly in autumn and winter in traditional "game" restaurants.

The aim of Zeal was to maximise value by shifting product volume to niche markets where the New Zealand identification reached the end user; both within Europe and in other geographical markets. Use of the Zeal quality mark was licensed to exporters who met specific quality and marketing criteria, including accreditation of ISO 9002 quality standards for processors. Zeal was rejected by German buyers because they wanted to add value to the product themselves, and often packaged venison from a number of countries into their own branded product (Beverland, 2005).

Cervena™

Cervena was first introduced in 1992 (Tuset, 2000). The word "Cervena" is a new word in the food language. It is a derivation from the Latin, cervidae, meaning deer, venison, the word for deer meat plus an A, for a premium product. Cervena is the appellation for fresh raised venison from New Zealand. The final aim of Cervena is to change the perception of venison away from a tough and gamey product with seasonal availability and irregular quality, to one that reflects the very real product benefits of New Zealand farmed venison. The name Cervena was created to differentiate New Zealand Venison from others available around the world. The standards for Cervena are strict. Healthy red deer or fallow deer must be between 18 and 30 months of age to guarantee a proper size and texture and must be raised without antibiotics, hormones, steroids or growth stimulants. This venison is very lean, low in fat and cholesterol and yet very high in protein. Cervena is less gamey than domestic venison, but still richer in flavour than traditional red meats. The Cervena label guarantees that chilled venison has been aged 21 days at -1° C and has average shear values of no more than 5 kgF, no part is greater than 10 kgF and 95% is less than 8 kgF.

Learning from the Zeal experience in Europe, and because insufficient funding was available, this branding strategy is used only for emerging markets such as North America, Australia, New Zealand and Mexico. According to DINZ the strategy is as follows ".. .high standards from a geographic location associated with quality, category imagery and position, room for competitive brands". DINZ is looking for a market perception of Cervena based on the nutritional profile, versatility, taste and tenderness of New Zealand venison. In addition, the natural New Zealand free-range origin offers an attractive product to create a new market among affluent and quality conscious consumers. Cervena differentiates itself from other venison by its innovative cuts, specification and service (such as Cervena online in http://www.cervena.com.) The use of the Cervena name is restricted to franchised New Zealand exporters meeting strict quality and marketing criteria, including the ISO 9002 accreditation for processors. This is to maintain its premium quality positioning in the market. The specific cuts are middle and hind leg. Cervena venison is packaged distinctively; gold stripes for chilled products and silver stripes for frozen products. A good packaging design not only reinforces the brand's characteristics and meets functional and legal requirements, it also leaves the end user in no doubt about the name of the product. The Cervena vacuum packs take the opportunity to brand, and to visually improve the look of the product.

The Cervena appellation was originally a way of binding a large number of small companies together to achieve consistent quality in designated markets. The Cervena Trust was set up by GIB & NZDFA to oversee and manage the branding, compliance and licensing of franchises. A trust was used because the partners felt that this would be the best way of finding a method to pass the brand back to industry. However, the trust deed locks in the current structure and no way has been found to pass control back to industry directly.

Because the number of firms has declined, the industry dynamics have changed. For Cervena to survive it will have to reflect current industry structure and be flexible enough to adapt to further change. The larger processing companies were lukewarm about using Cervena (see various industry Newsletters e.g. Deer Industry News, June 2003) as an appellation. Issues associated with who funds Cervena and the current lack of success in the market means that pressure for change has increased, but all the major processors and exporters now hold Cervena franchises.

Despite these attempts at branding, prices received by producers and the value of venison exports have been extremely volatile. This has introduced uncertainty into the deer industry, and it may be why many farmers who farm deer also farm other livestock in order to counter some of the adverse effects of venison price volatility. This lack of price stability would also be due to the fact that the volume of Cervena-branded venison remains relatively low, accounting for 12% of total export volumes (Tuset,2000). Growth in Cervena sales has lagged growth in supply, especially since 2000.

Because the Cervena share of sales is so low, the ability of Cervena to buffer the price drops associated with massive over supply of venison is limited. Although Cervena volume has been relatively stable since the year 2000, it did contribute to the growth of NZ venison sales volumes and value to North America in the 1990's.

Prior to Cervena launch, venison sales to the USA were $7.4 m, and in 1999, they were $18 m. Not only had the volume of Cervena sales increased by 85% from 555+ to 1025+ kg by 1999 compared with growth of 30% in total venison sales, but the average price had also increased by 35%. In line with the objectives for the brand, awareness of Cervena amongst targeted chefs rose from 45% to 69% and usage improved from 25 to 33% between 1996-1998, this time of the largest investment into Cervena (Beverland, 2005). The chefs like Cervena because it is an excellent product, and they perceive that the industry is working together to produce that quality product, adding to the credibility of the brand.

This suggests that Cervena's target market, in the countries where it is currently being used such as the US, is being fully met. Therefore, Cervena has done the job it was intended to do in the US, but does require ongoing support to continue capitalising on its brand value. Beverland (2005) suggests the position of Cervena could be eroded by industries that are unencumbered by region of origin limitations and can develop consistent levels of supply, at a consistent price. He suggests that 'region of origin' as a source of competitive advantage may not be sustainable as other game producers adopt similar quality programmes and imitate Cervena. The relationship-based strategies on which Cervena is based (both within NZ and within the markets) may restrict it from being flexible to changing market needs and opportunities. His greatest concern is the inability of the industry to guarantee supply and price; the continual use of auction markets and the inability to manage herd size he predicted would limit the industry's ability to develop a consistent positioning statement and a global niche brand.

Company brands

As the industry expands and seeks to diversify markets, and reduce reliance on the European wholesales, NZ processor-importers have developed their own individual brands. For example, PPCS has created Silver Fern and Alliance has Gold Class Venison. These company brands have been developed to differentiate themselves in the marketplace and to align with their other meat offerings to supermarkets. All the brands, and the associated generic branding supported by DINZ explicitly state that the venison is from New Zealand. However, DINZ estimates that only 25% of exported venison in 2004 was sold where the *consumer* could identify that the venison comes from New Zealand with a clear country of origin brand.

Most exporters do not promote their venison as being "farmed venison", rather they emphasise the country of origin and that the deer are free range.

Generic Branding/Promotion of New Zealand Venison & Season Expansion

The constraints of seasonal consumption are being addressed in overseas markets. The Sommerkampagne in Germany was a concerted effort to create increased awareness among consumers, and thereby stimulate demand and increased volume throughput for the distributors. The campaign comprised consumer advertising, a web campaign and PR support. In-store POS materials were supported by in-store tasting activities. Future campaigns will focus on highlighting the quality of NZ venison to likely consumers when they are looking for venison at the traditional time of the year. Future campaigns will be mounted in conjunction with German distributors using local advertising to link the message with where NZ venison is

available. DINZ has made a long-term commitment to the retail channel in the knowledge that they can access some 85 million potential customers.

In Belgium and the Netherlands DINZ will support distributors with retail tastings, chef demonstrations, a hotel promotion (Austria), advertising in foodservice order books in France, retail promotions in Switzerland and a joint promotion with the UK BDFA

In North America DINZ is funding promotion of Cervena to support individual company's activities to expand the market. The support will comprise event sponsorship and public relations activities. One such event will be a lunch with cooking demonstrations for the NY Giants football team. The team nutritionist has been co-opted.

In New Zealand, there are a number of support activities. Retail promotion is being increased but so too is support in the food service sector. DINZ is sponsoring chef training competitions and student demonstrations in the polytechnics.

Market Diversification and Second-Mover Advantage

The motivation to diversify the markets for NZ venison has come from two sources. The first was the recent large increase in the volume of venison being supplied between 2000 and 2005, the number of deer slaughtered increased 27% as the national deer herd decreased, although slaughter numbers are now declining. German demand for venison is quite stable and has been for many years, and other relatively long-standing markets such as the US have also shown low levels of growth.

The second motivation was to reduce the perceived market control the German wholesalers have had on exporters. The changes to the structure of the venison industry that have been occurring since around 2000 when the large meat processor exporting companies began entering the industry have provided much of the means to enable the market diversification to occur. Not only can these second-move companies challenge the power of the wholesalers they have the scale necessary to create bargaining power, and the scope (sale of venison and large volumes of lamb) to link directly with supermarkets (Nixon & Duncan, 2004). PPCS saw venison as another product stream that they could add to their business, generating the advantages described above. Shareholders in Alliance were looking for their company to provide a deer slaughter service.

The strategy being followed by companies such as PPCS and Alliance, to develop relationships with retailers and become closer to the consumer has been understood as being a way to generate better returns. Smaller processing companies have been unable collaborate to the degree needed to supply the bigger German retail market in the quantities demanded or guarantee year round supply demand by supermarkets. Bigger processors have been able to provide venison products on a year round basis and in a consumer acceptable format. Processors have developed retail ready packs including pre cooked products combining venison with pasta, noodles and vegetables.

The key promotional tool used as part of this market diversification strategy has been price. Supermarkets are highly price sensitive and pay less for venison than wholesalers pay, but it has been useful to develop them as to do so has enabled large processors to sell the surplus supply through other channels, thereby protecting the wholesaler market from over supply.

Contrary to popular wisdom the retailing option has been a cost added rather than a value added strategy but it has been necessary to 'get rid of' the huge increase in venison created by the downsizing of the national herd. The industry was fortunate that the larger processors were able to piggyback venison onto their other products and hence manage the additional volume; the acid test now export volumes are falling is whether such price sensitive markets will be retained. There is a reluctance to walk away from the German wholesalers who pay a good price but for a limited volume; managing the amount of kill that volume represents without having an impact on the wholesaler price is a challenge for the industry.

Flexibility and Responsiveness

Just as the larger processors-exporters have been able to exploit their economies of scale and scope, which provided bargaining power, and transport cost savings, the smaller, specialised venison exporters take advantage of their ability to be highly flexible and responsive to customer requirements. This agility and responsiveness allows them to earn a premium on the products they sell. These smaller companies can move quickly enough to meet small but urgent orders from restaurants or cruise liners. Although they all have longstanding contracts and customer relationships, they have the ability to be opportunistic and pursue innovation without disrupting their businesses.

Industry-wide Quality Systems

Right from the outset, deer farmers were determined to set up something different to a traditional meat industry. What they ended up with was, at the time, well ahead of the rest of the world (Drew, pers. com.). The deer industry is built on knowledge and sound systems. For example, the industry initiated its own quality assurance schemes. Initially industry-wide, these have been replaced by processor specific schemes because of requests from companies, customers in various markets and to create points of difference. These schemes are audited and this is funded by industry. There are 1400 accredited farmers and 800 drivers (Tuset, 2000).

Similarly, the industry has developed an animal welfare code. Customers did not specifically request this but it is in response to increasing societal pressure. This code acts to protect market access and ensures genuine animal welfare. The code involves vets, MAF, Animal Welfare Advisory Committee and the RSPCA through the National Velvet Standards Body (NVSB). Twenty percent of farmers are audited each year (i.e., every farmer is audited every 5 years). This ensures that the practice of velveting can be defended, which is critical to managing a key challenge for the industry as velvet growth and achieving target slaughter weights coincide and deer cannot be transported in velvet.

The New Zealand Deer Farmer's Landcare Manual was completed and launched at the Annual Deer Industry conference in June 2004. Over 3 years in the making, this publication is one part of an integrated deer industry environmental programme.

Deer processors must also comply with ISO9002 standards.

Education of Customers and Market Research

Further to investing in knowledge around production and product quality, the GIB recognised the need to ensure the entire value chain knew how to protect the quality of the consumed product, because incorrect preparation and cooking can very quickly ruin venison. Chefs, buyers and consumers alike typically assumed that farmed New Zealand venison would be tough, 'gamey' tasting and therefore require long, slow cooking. To counter these perceptions, the GIB employed an executive chef, Graham Brown, who has been working for the venison industry for more than 15 years. Chef Brown provided chef training and demonstrations on cooking venison in retail outlets in order to ensure people do not have a bad experience with venison because venison is a new product for many people cooking it at home. He has excellent relationships with a number of culinary training institutions, an avenue that has been crucial to imparting knowledge along the value chain. Recently, DINZ produced a Cervena CD that shows the history of the product, how it is produced, how to cook it and recipe ideas.

Alongside of the effort made by the GIB and more recently DINZ in understanding the market and consumers, and ensuring that customers know how to prepare and cook New Zealand farm-raised venison, the processor-exporters and exporters have also developed a very good understanding of their customers, whether they are chefs, wholesale buyers, supermarkets or consumers.

Communication along the supply chain

Communication along the supply chain to farmers is becoming increasingly open, although this was not the case during the 1990s and early 2000s. Farmers had the perception that venison was bullet proof following FMD and BSE outbreaks in Europe. What is clear is that $10/kg for venison was never a market price and that the consumers never paid anything near that price. This message was not transmitted to farmers, and this was a key factor that caused the large swings in deer numbers and slaughter levels in the late 1990s and early 2000s. Farmers, and possibly processors and exporters too, were not looking to see where the extra product would go. Some industry participants believe that these high prices were an illusion created by large processing companies in order to attract lamb suppliers.

DINZ and exporters are now providing farmers with market information as well as forecasting deer numbers in an effort to illustrate the likely impacts on prices and industry profitability. This is an attempt to ensure all participants and farmers in particular have the information necessary to make decisions that allow collective management of venison supply, in the hope that this will reduce the volatility in prices and profitability, and provide certainty to customers around volumes.

One of the key points that companies are now communicating to farmers on a regular basis is that the deer "killed today" will most likely not be consumed for

about eight months. Until recently, this has not been well understood by farmers, but is certainly a substantial issue for the industry to manage.

6 Critical Success Factors

This study has identified a number of critical success factors that have enabled the venison industry to grow and to meet the demands of several sophisticated customer groups. These include:

- Existing market in the early stages of the industry's development
- Tariff advantage of game meat
- Comparative production advantages
- Intrinsic attributes of venison as a product and NZ as the origin
- Communication along the value chain, especially with customers and chefs
- Product positioning and branding
- Economies of scope and scale and the ability to diversify the customer base
- Responsiveness of smaller exporters

Each of these success factors are discussed in more detail below.

Existing market in the early stages of the industry's development

The existence of a ready and relatively large market in Germany was a significant factor in allowing the venison industry to grow to its current level. However, this well established market has been both a positive and a negative for deer producers in New Zealand. It was positive because markets have readily accepted New Zealand deer products without large expenditure on advertising or education programmes. However, it has been difficult to gain any market control from the wholesalers, who have traditionally supplied deer products to the food service sector and supermarkets. The wholesalers are typically large and exert considerable bargaining power in the venison marketing chain. The presence of this very good market also possibly meant that the industry did not pursue other market opportunities, increasing exposure to this market when supply exceeded demand, as has occurred in recent years.

Tariff advantage of game meat

The tariff-free status of venison in Europe increases the margin-earning potential of venison relative to other meat products.

Comparative production advantages

New Zealand venison producers and processors have a number of comparative advantages over countries and producers. Scientists have built up knowledge and expertise from researching other farmed animals, and this has allowed deer to successfully become a farmed animal. Key areas of farm management that have benefited include deer handling, reproduction, yarding, and feed requirements.

Processors in New Zealand can access a good quality workforce while maintaining lower costs of processing than in customer countries. This benefit is common to all of New Zealand's meat sectors, but is being eroded, especially in beef by South American nations. New Zealand is the only significant producer of farmed venison, so there are no competitors with the same product. However, this position of relative strength could be eroded, should other nations such as China begin to farm large numbers of deer for venison.

There is a higher yield of saleable product from a venison carcass than from other species such as sheep and beef cattle. This provides processors the opportunity to spread fixed costs over a larger turnout without having to increase throughput to the same extent. This counters to some extent the smaller scale of venison processing facilities, and the associated lack of economies of scale.

Intrinsic attributes of venison as a product and NZ as the origin

New Zealand farmed venison product is considered a good product and chefs and consumers like it. Venison is a natural, healthy meat with much less fat than other meat from other species. New Zealand is viewed as a safe and healthy place to produce and pack food. These factors, and the relatively scarcity of venison, both farm raised and wild shot means that prices received for venison can be higher than other meat products, and that the margin-earning potential is higher because of these intrinsic attributes rather than producers or processors having to do more value adding.

Communication along the value chain

The deer industry (processors and DINZ, and its predecessors) have had very good programmes in place to inform and educate their customers such as chefs. This has been critical to these customers understanding how to use/cook farm-raised New Zealand venison and to ensure that the intrinsic value of the product is protected, and then realised by consumers. This communication has been the key encouraging market pull and demand for New Zealand's venison products.

Product positioning and branding

Branding has been part of the New Zealand venison marketing programme since the 1990s. However, such attempts have not always been successful. Zeal is once such example. However, Cervena and processor-exporter brands have been much more successful. They have achieved high levels of recognition amongst their target audiences. The Cervena brand has certainly grown the venison business in the US,

but in the last five-six years, this demand has remained static. It is uncertain whether this means that the brand is no longer working or the market is saturated at the price points being aimed for.

Economies of scope and scale and the ability to diversify the customer base

A significant change around strategy and structure of the venison industry is the development of second mover advantage. This has been clearly demonstrated by PPCS, one of two large meat processing cooperatives in the South Island, that has entered the mature venison trade on a large scale using its underlying core competencies (scale in meat processing and scale in transportation) to be competitive.

Not only has scale been important but also scope. They have co-ordinated shipments to reduce transport costs and have greater bargaining power with large wholesalers that buy both venison and lamb. Due to the very large increase in supply of venison in the last five years venison has been available to sell to supermarkets. The large processors have been able to supply product at the times the supermarkets demand it, and they already supplied lamb to those retailers. This has introduced the processors of venison to the consumer market, and most importantly, has put processor-exporters more in touch with consumer trends. Based on this increased knowledge of consumers, these processors have been able to develop products that are retail ready, and reducing the chance of consumers having a negative experience with venison cooking at home.

Responsiveness of smaller exporters

Just as the larger processors-exporters have been able to exploit their economics of scale and scope, which provided bargaining power, and transport cost savings, the smaller, specialised venison exporters take advantage of their ability to be highly flexible and responsive to customer requirements. This agility and responsiveness allows them to earn a premium on the products they sell. These smaller companies can move quickly enough to meet small but urgent orders from restaurants or cruise liners. Although they all have longstanding contracts and customer relationships, they have the ability to be opportunistic and pursue innovation without disrupting their businesses.

7 Future Challenges

The venison industry does have challenges, and some of these have existed for some time, affecting the ability of the industry to maintain long-run profitability of all participants along the chain. The volatility of venison supply and the inherent seasonality of production remain the most significant challenges to achieving a sustainable market price. Others include the trade-off that producers make between venison and velvet, the potential debate on farmed versus game, inventory management, managing customers' expectations when supply declines and the need to balance communication with producers and customers with the need to retain information to maintain a competitive advantage.

Sustainable Market Price

The key challenge that remains for the industry is volatility of venison supply. The uncertainty is created by a number of factors such as prices of venison and velvet, the relative profitability of competing land uses and farmer confidence, with all of these factors being interrelated. The initial and traditional German wholesaler market is steady but limited in size and suffers from supply and demand seasonality challenges. If possible supply to that market should be managed at the required level to stabilise price. If the venison kill is going to remain above the 400,000 head required by that market then the industry requires strategies that will ensure long-term contracts in markets where NZ venison is a strong value proposition.

Volatility of supply has a severely negative impact upon the confidence of customers and their desire to invest in infrastructure and the development of new, high-end markets and promotion of venison. This in turn affects the prices received in market and therefore by farmers, and thus the sustainability of the industry.

Venison versus velvet

The decision by farmers to slaughter or not slaughter deer has historically been influenced by the relative returns from venison and velvet. In the last few years, velvet prices have been so low that they have not been a consideration. However, velvet prices are increasing again, perhaps not to the peaks seen previously, but to levels where they could well influence the decision to retain or slaughter stags. This competition between co-products only adds to the volatility in supply of venison.

Inventory management

Inventory management and the cost associated with storing frozen venison for up to eight months for the traditional European game market is a significant cost to the processing sector, and therefore affects the returns received by farmers. The management of this inventory is largely left to the large-scale processor-exporters. They have the storage capacity and working capital available to manage this. In

addition, customers in the key German markets are also aware of the position that the large-scale processors are in, and can use this knowledge to their advantage in negotiating price. As such, prices are directly related to the previous year's kill numbers.

Managing customer expectations

The recent large increase in venison supply has required the exporters and DINZ to work hard to expand the number of markets serviced. This expansion has often only been possible by lowering price, so that venison could displace the previous meat source. This is certainly the situation with venison being used as an ingredient for small goods manufacture such as salamis and sausages. These customers have invested in re-labelling their products and in some cases severed ties with other suppliers. When the supply of venison declines as it is beginning to do now in 2007, many of these customers will end up not being supplied with venison, even though they have provided the industry with a viable, though not very profitable, outlet for the surplus venison. Certainly, these customers are the obvious customers to "neglect" in order to raise processor and producer returns to more sustainable levels. However, these same customers will be less willing to assist should such an imbalance of supply and demand occur in the venison industry in the future.

Communication with producers and customers

One of the challenges the deer industry faces is that the more information that is shared with producers, the more that is available and accessible to customers. The type of information that might assist the production section of the industry to better manage venison supply, such as numbers of deer slaughtered, is also valuable to customers, especially the commodity customers such as the German wholesalers, and possibly European retailers. This is because it gives them knowledge of the supply position, and provides them with advantage in negotiations. This is a challenge common to many of New Zealand's primary industries.

References

Beverland M. (2005) Creating value for the channel partners: the Cervena case. Jornal of Business & Industrial Marketing Vol.20 No.3, pp127-135

Brown L. (1997) *Competitive Marketing Strategy*, Nelson, Melbourne.

Clouston, F.R.S., (1974), *Venison industry in New Zealand.* Ministry of Agriculture and Fisheries New Zealand.

DINZ. Deer Industry New Zealand (2004) Venison Industry Strategic Intent 2005-2010. For Industry Consultation 28th May 2004.

DINZ. Deer Industry New Zealand. (2006). *Annual report 2005-2006*. Retrieved from the world wide web: www.deernz.org.

Deerfarmer.com (2003). Analysis venison markets. *Deer-library*. Retrieved November 09, 2006, from http://www.deer-library.com/artman/publish/article_38.shtml#top.

Gattorna J.L., Walters D.W. (1996) *Managing the Supply Chain*. MacMillan Press, London

Hudson, J., R. (2006). *Wildlife production: trends and issues*. Department of renewable resources, University of Alberta, Edmonton, Canada.

Landcorp (2007a) Landcorp Farming Ltd: The company. Retrieved February 22, 2007 from www.landcorp.co.nz

Landcorp (2007b) Sire breeding programme. Landcorp Farming Ltd. Retrieved February 21, 2007 from www.landcorp.co.nz

Ministry of Agriculture and Forestry. (2006). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2006/deer/index.htm

Ministry of Agriculture and Forestry. (2005). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2005/deer/httoc.htm

Ministry of Agriculture and Forestry. (2004). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2004/deer/httoc.htm

Ministry of Agriculture and Forestry. (2003). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2003/deer/httoc.htm

Ministry of Agriculture and Forestry. (2003). Venison demand. *MAF*. Retrieved November 11, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/profitability-and-economics/structural-change/market-dynamics-for-venison/conf4-03.htm#P221_11057

Ministry of Agriculture and Forestry. (2002). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2002/deer/httoc.htm

Ministry of Agriculture and Forestry. (2002). New Zealand Deer industry. *MAF*. Retrieved February 27, 2007, from http://www.maf.govt.nz/mafnet/rural-nz/profitability-and-economics/structural-change/market-dynamics-for-venison/conf4-06.htm

Ministry of Agriculture and Forestry. (2001). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/deer-2001/httoc.htm

Ministry of Agriculture and Forestry. (2001a). The international deer scene. *MAF*. Retrieved November 20, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/profitability-and-economics/structural-change/market-dynamics-for-venison/conf4-01.htm#P50_2720

Ministry of Agriculture and Forestry. (2000). Deer monitoring report. *MAF*. Retrieved November 10, 2006, from http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/fmdeer00/httoc.htm

Ministry of Agriculture and Forestry. (1989). *New Zealand Deer Industry Situation and Outlook*. Wellington: Ministry of Agriculture and Fisheries.

SONZA. Ministry of Agriculture and Forestry. (2003). *Situation and Outlook NZ Agriculture and Forestry (SONZA) Report, May 2003 Update. www.maf.govt.nz* . Wellington: Ministry of Agriculture and Fisheries.

SONZA. Ministry of Agriculture and Forestry. (2006). *Situation and Outlook NZ Agriculture and Forestry (SONZA) Report, July 2006 Update. www.maf.govt.nz* . Wellington: Ministry of Agriculture and Fisheries.

New Zealand Game industry board. (2002). Market report. *Market report*, 70, 2.

New Zealand Game industry board. (2001). Market report. *Market report*, 59, 2.

New Zealand Game industry board.. (1999). Market report. *Market report*, 49, 2.

New Zealand Game industry board. (1998). Market report. *Market report*, 43, 4.

New Zealand Game industry board. (1997). Market report. *Market report*, 31, 1.

New Zealand Game industry board. (1997). Market report. *Market report*, 37, 2.

New Zealand Game industry board.. (1995). Market report. *Market report*, 20, 1.

OECD-FAO (2007) OECD-FAO Agricultural Outlook 2007-2016 www.oecd.org/publishing

Nixon C., Duncan I. (2004) Innovation and trade liberalisation: a case study of the New Zealand deer industry. NZ Trade Consortium working paper No 31. The New Zealand Trade Consortium in association with the New Zealand Institute of Economic Research (Inc). www.nzier.org.nz

Parnell, J.A. (2006) Generic strategies after two decades: a reconceptualisation of competitive strategy. Management Decision Vol 44, No 8, pp 1139-1154

Pearse E, SriRamaratnam R, & Dake C (1994), Dynamics of supply and demand for the New Zealand Deer Industry. Australian Agricultural Economics Society, Victoria University, Wellington, New Zealand, 8-11 February.

Porter ME (1980), Competitive Strategy: Techniques for analysing industries and competitors. New York: The Free Press.

Putnam R 2000, *Bowling Alone: The Collapse and Revival of American Community*, New York.

Shadbolt N.M., McDermott A., Walter D. (2007) A Value Chain Management Approach to Exploring Structure, Conduct and Performance in the Venison Industry. 17th Annual World Food and Agribusiness Forum, Symposium and Case Conference, Parma, Italy

Tuckwell, C., Shapiro, H. & Thonard, J. (1998). *Report on the second world deer farming congress*. Limerick, Ireland: Rural industries research & development corporation.

Tuset.P.A., (2000), *Viability and profitability of the Chilean deer industry.* Unpublished Masters thesis, Massey University, Plamerston North, New Zealand.

Yerex D (1982), The farming of deer. Agricultural Promotions Associates Ltd. Wright & Carman Ltd.

Yerex D (2001), Deer the New Zealand Story. Canterbury University Press.

Yin, R.K. (2002) *Case Study Research: design and methods*: Thousand Oaks, CA: SAGE Publications. 181 pp.