



Bindaree Beef Plant Initiated Project

Eating Quality

Final Report
November 2010

PREPARED BY:



HUNT PARTNERS

Solicitors & Barristers

Level 1 99 Elizabeth Street
SYDNEY NSW 2000
Tel (02) 9236 9266
huntpartners@bigpond.com

Contents

Preface	3
Executive Summary	4
Objectives and Methods	8
Objectives:	
1. Consumer Research	9
2. Benefit Cost Analysis	14
3. Comparative International Research	15
4. Carcase Grading Trials	24
Conclusions and Outcomes	25
1. Legislation refers to media response	29
Recommendations of the Bindaree PIP	33
References	35

Preface

This is the final report of the Bindaree Beef Plant Initiated Project ("the Bindaree PIP") conducted with joint funding from Bindaree Beef and the AMPC. The report to AMPC and industry of the results of the project is listed as a key project output in the PIP joint funding application submitted to the AMPC in February 2010 and includes:

- findings of the benefit cost analysis (BCA) into beef grading and labelling;
- findings on the correlation between slaughter age and beef grading systems and beef consumption;
- outcomes of comparative carcass grading and MSA cut grading taste test programs;
- findings of consumer surveys and focus groups.

In accordance with the terms of the PIP funding application, copies of this report will be forwarded to beef industry Peak Councils, the Ministers for Primary Industries in all States and Territories, the Federal Minister for Agriculture, the Chairman of the PIMC Working Group and State and federal parliamentarians.

The research conducted under the Bindaree PIP has made an important contribution to the development in NSW of the *Food Amendment (Beef Labelling) Act 2009* which provides standards for the truthful labelling of beef products by retailers in New South Wales and gives the Minister for Primary Industries powers to implement a beef grading system in NSW through regulation. The research was referenced in the deliberations of the industry reference group established by the Minister to assist in the development of the labelling classifications. It has also generated significant comment in the print, television, radio and online media.

Given the current push by the NSW government toward a legislated grading system, and calls for the provisions of the *Food Amendment (Beef Labelling) Act 2009* (NSW) to be implemented nationally, the need for reliable research into consumer attitudes toward beef, awareness of MSA and attitudes toward labelling and marketing language has been particularly pressing.

Until now, information on these subjects has been largely anecdotal and a detailed benefit cost analysis has not previously been conducted in relation to either MSA or a national beef grading system.

This report compiles the original primary research conducted under the Bindaree PIP and evaluates the results in the context of relevant industry and academic research.

The findings outlined in this report establish a strong case for the extension of the NSW legislation throughout Australia and for the introduction of a comprehensive national beef grading system.

Norman Hunt

Principal
HUNT PARTNERS

Executive Summary

Background

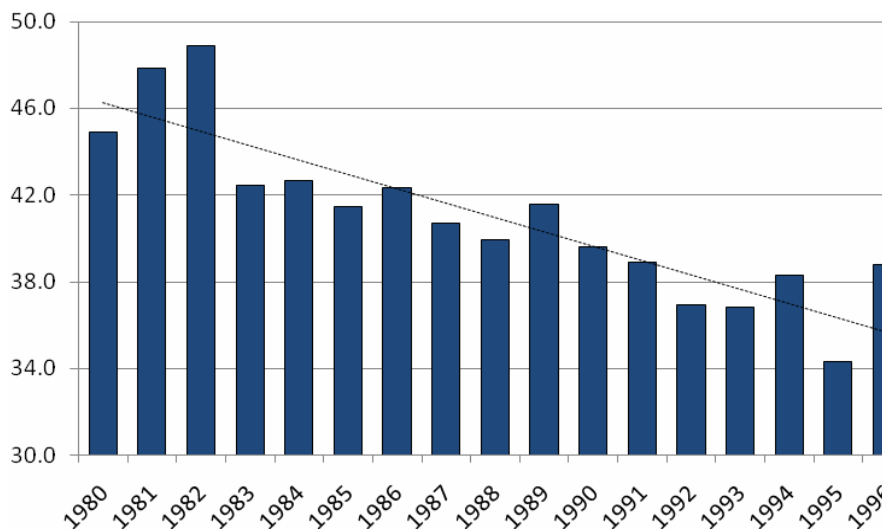
The domestic market is the largest single country market for Australian beef. It accounts for one third of total production and is worth \$6.7 billion annually (RMAC 2010).

However, in recent years industry marketing efforts have been principally directed toward improving demand in export markets, to the relative neglect of the domestic market.

In 1998 MLA introduced the Meat Standards Australia (MSA) grading system to halt the decline in per capita domestic demand for beef. The MSA 1998 Business Plan noted that per capita beef consumption was on a long term trend decline of about 1.7% per year.

A Meat Industry Strategic Plan (MISP) published by the Meat Industry Council (MIC) in 1996 identified that domestic consumers were dissatisfied with the inconsistent eating quality of beef, leading to decreased consumption and a shift toward more consistent competing meat products. It identified the need to increase real demand for beef as a central challenge for the Australian beef industry.

Decline in Australian Beef Consumption Per Capita Before MSA (kg)



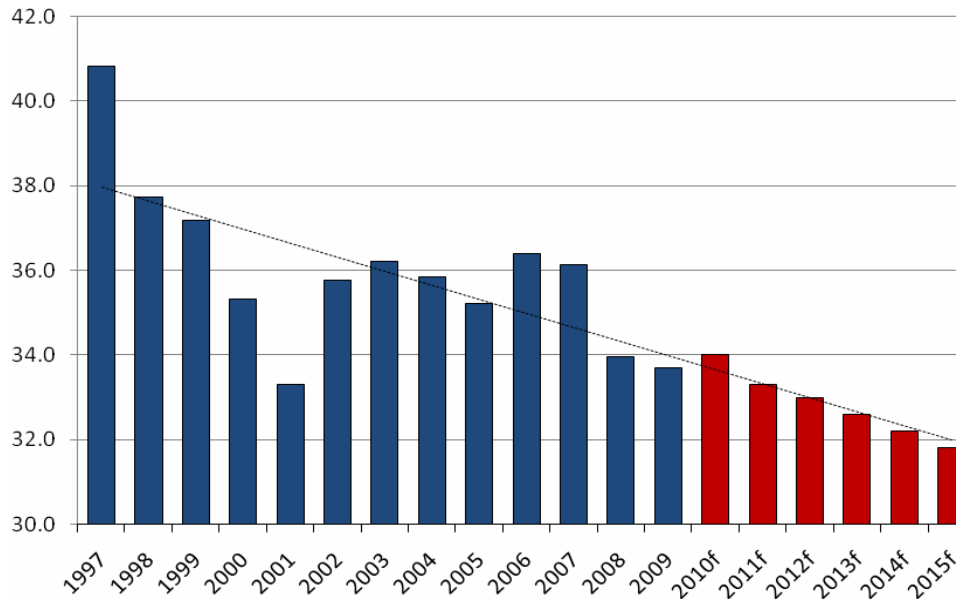
ABARE (2008)

Preliminary research outlined in the 1996 MISP forecast a \$1.2 billion per annum benefit to the beef industry through increased consumption and prices from a system that guaranteed eating quality and palatability to the consumer.

The implementation of MSA in 1998 was intended to deliver this benefit to the beef industry by providing a whole of market grading system and to date over \$100 million has been spent on its development.

However, despite the recent increase in the uptake of MSA, only a small percentage of beef cuts are graded, and MSA has been ineffective in halting the decline in per capita consumption. The per capita consumption trend decline between 1997 and 2009 continued at around 1.7% per year.

Decline in Australian Beef Consumption Per Capita Since MSA (kg)



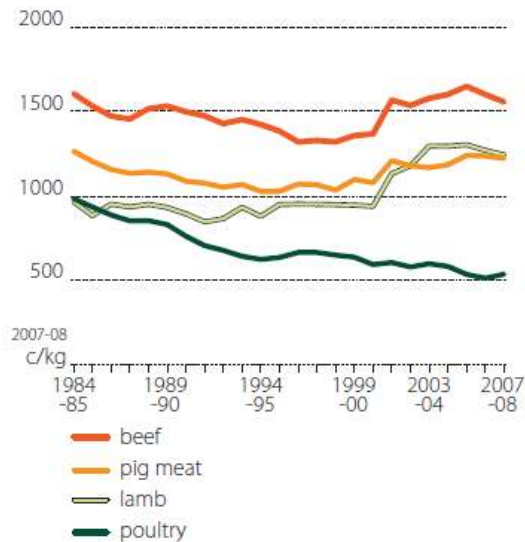
ABARE (2008), f: MLA forecast

Since the commencement of this project MLA has released updated consumption figures forecasting that Australian domestic beef consumption will fall to 31.8 kg per person per year by 2015 (MLA 2010). The forecasted drop represents a fall of 23% on the 41.3 kg per person consumed by Australians in 1997, the year before MLA was incorporated and MSA was launched.

In Australia, there has been an increase in the demand for poultry and pig meat as they are substituted for red meat, reflecting changes in relative prices and also changing tastes and preferences (ABARE 2009).

There has been no significant rise in retail prices for beef in real terms over the past 20 years. Domestic demand for beef has declined and demand for competing meats has increased (ABARE 2009a).

Australian Retail Prices for Red Meat



ABARE (2009a)

The increase in recent years in the quantum of production of beef in Australia and decline in domestic per capita consumption has led to a greater percentage of Australia's annual beef production being sold on the export markets (currently approximately 66% export, 34% domestic compared to 60% export, 40% domestic in 1997-1998) with the effect that the Australian beef industry has become increasingly vulnerable to currency fluctuations and changes in global demand (ABARE 2009a).

The extent of the Australian beef industry's vulnerability to currency fluctuations has become evident in the last twelve months with the Australian dollar reaching parity with the US dollar. This has induced some of Australia's largest beef exporters to switch product historically sold to export markets back onto the Australian domestic market.

International Comparisons

Australia is unique in that consumers are sold large quantities of prime cuts from cast for age cows. Australia maintains sufficient breeding cows to supply the beef that is sold on both the export (66%) and the domestic market (34%). GHD Hassall Costs Benefit Analysis study found that approximately 80% of the prime cuts from the cast for age cows from the total breeding herd were sold onto the Australian domestic market. Consequently, roughly 30% of the prime cuts sold by Australian retailers come from these older animals.

Consumers in comparable international markets including the UK and USA do not eat prime cuts from cast for age cows.

Unlike countries such as the UK, US and Japan, Australia does not have a whole or majority of product quality assurance or grading system with respect to beef. Rather, many retailers have sought to obtain price premiums by selling low and inconsistent quality old cow meat under misleading labelling terminology including "Budget", "A-Grade", "Export Quality" and now "Economy".

Whereas per capita consumption of beef in Australia has fallen significantly in the past 20 years, consumption in countries with grading or quality assurance systems, and where little or no old cow beef is sold as prime cuts, has remained stable or improved.

Consumer Research

Consumer research conducted under the Bindaree PIP program and by MLA shows:

- most consumers have never heard of MSA and are unable to identify the significance of MSA grades;
- the terminology in the AUS-Meat Domestic Retail Beef Register is confusing to most consumers and a significant education campaign is needed to render it effective;
- the "Economy" label which has been incorporated into the Aus-Meat Domestic Retail Beef Register is understood by consumers to indicate value for money, rather than the age of the animal or low or variable quality;
- beef labelled "Economy" was perceived by consumers as offering better eating quality than beef labelled "Budget" or beef labelled "Mature", which was associated with beef from an old cow that would be chewy and lacking in flavour;
- most of the beef consumed in Australia is ungraded and that the eating quality of 50% of ungraded beef is unsatisfactory.

Cost Benefit Analysis

The GHD Hassall cost benefit study on a national beef grading system conducted under the Bindaree Beef PIP found:

- approximately 1.7 million cast for age cows (ie, 10 year old cows at the end of their breeding life) are killed in Australia each year and that 80% of the prime cuts from those animals are sold onto the Australian market.
- the volume of prime cuts from cast for age cows sold in Australia market each year needs to be understood in the context of the total slaughter for the Australian domestic market of approximately 2.9 million cattle each year.
- the removal of cow meat from the Australian market would lead to an increase in the price of younger cattle, with a potential industry gain of \$667 million.
- the potential industry payout from a whole of market grading scheme is between \$500 million \$1.2 billion a year.

Domestic Beef Promotion

The \$5 million expenditure under the current MLA domestic beef promotion campaign is unlikely to achieve long-term benefits given the majority of beef sold in Australia is ungraded and MLA research shows that every second cut of ungraded beef fails to meet consumer palatability requirements.

Conversely, international data from countries that have all (or majority) of product beef grading systems suggests that a marketing campaign, combined with a grading system that guarantees consistent eating quality standards could be expected to improve per capita consumption and reverse the forecasted decline.

Carcase Grading

The graded prime cuts from the MSA Carcase Grading System trialled in 1998 and tested by 20,000 consumers provided a high degree of consumer satisfaction equivalent to the USDA system.

A similar system could complement the MSA cuts-based grading (which is currently only applied to a minority of beef sold at retail level and is not understood by consumers) to provide an eating quality guide for the majority of the prime cuts sold to Australians.

Bindaree Beef PIP Objectives and Methods

The objectives of the project are outlined in the PIP funding application submitted to AMPC.

The general objective was to determine the costs and benefits of a voluntary or mandatory meat grading and labelling system for processors and retailers and to ascertain consumer responses to current and proposed grading and labelling terminology.

Each objective correlates with a milestone set out in the PIP funding application.

Objective 1: Consumer Research

To determine consumer awareness of current and alternative grading and labelling descriptors (Milestone 4).

Method

Original consumer research conducted by Newspoll into consumer awareness and understanding of:

- MSA;
- Labelling terminology for beef from 8 tooth animals, including the extent of consumer awareness and understanding of terms such as "Budget" "Budget Grade", "Budget Low Quality", "Manufacturing" and "Economy".

Analysis of existing consumer research into consumer awareness and understanding of labelling and grading terminology.

Objective 2: Cost Benefit Analysis

To determine the potential return to industry of a whole of market beef grading system (Milestone 3).

Method

Cost benefit analysis of a beef grading system for processors and retailers which will be suitable for consumers. Conducted by agricultural economists GHD Hassall & Associates.

Objective 3: Comparative International Research

To identify and evaluate slaughter age legislation and grading systems in comparable foreign markets (Milestone 2).

Method

Comparative international research and reports into the correlation between slaughter age, beef grading systems and beef consumption.

Objective 4: Carcase Grading Trials

To identify viable alternative grading systems to MSA which are capable of providing whole of market grading and achieving the industry return identified in objective 4 (Milestone 5).

Method

Taste testing for carcase beef grading based on differing criteria and with eating quality comparisons with MSA graded cuts.

Objective 1: Consumer Research

Newspoll: Bindaree PIP MSA Study

Description

Consumer survey on awareness of MSA conducted by Newspoll in February 2010 under the Bindaree PIP.

Methodology

A telephone poll conducted nationally by adjusted random sampling among 1,200 respondents aged 18 and over.

Key findings

The majority of respondents had never heard of the Meat Standards Australia grading system.

Of the 45% who said that they had heard of MSA:

- 86% agreed with statement "MSA indicates that the beef is approved for human consumption";
- 63% agreed with the statement "MSA indicates that the beef is nutritional and healthy";
- 62% agreed with the statement "MSA rates the overall eating quality of beef";
- 43% agreed with the statement "MSA rates the tenderness or juiciness of the beef";
- 46% agreed with the statement "MSA compares the eating quality of one piece of beef to another"; and
- 31% agreed with the statement "MSA rates the flavour of the beef".

Analysis

The Newspoll study indicates that consumer awareness of MSA is relatively low. While a significant minority of respondents claimed to have heard of MSA, only 28% claimed to have heard of MSA and were able to associate MSA with eating quality.

It is likely that fewer respondents would have been able to correctly identify the meaning of MSA grades had they been asked to provide an unprompted response.

Newspoll: Bindaree PIP “Budget” Label Study

Description

Consumer survey on consumer responses to the “Budget” label conducted by Newspoll in February 2010 under the Bindaree PIP.

Key findings relating to the “Budget” label

Most respondents did not realise the "Budget" label indicates the product comes from old cows or that it relates to eating quality, rather:

- 28% thought it meant the meat was not fresh;
- 12% thought it meant the meat was fatty;
- 29% thought it related to the cut;
- 38% thought it related to the quality of the beef;
- 24% associated the term with cheapness or a cheap price, including 10% who thought the term indicated the item was on special; and
- only 6% of respondents thought that the “Budget” label meant that the beef came from older animals;

Analysis

Respondents indicated no clear understanding of the word "Budget". Consumers gave the term a multitude of other meanings including cheapness, used by dates, bulk buys, specials, overstocking and even that the meat had been imported. The "Budget" descriptor is therefore ambiguous and does not properly inform consumers of the nature of the product that they are purchasing. Although overall most respondents associated the term with negative attributes, a significant minority associated the term with cheap price or good value.

Delta MV Knowledge Solutions: Beef Retail Classification Research

Description

Consumer beef retail classification research prepared for MLA by DeltaMV Knowledge Solutions in May 2010 in relation to the AUS-Meat Domestic Retail Beef Register. The terminology tested in this study (specifically "Mature" and "Economy") has since been incorporated into the AUS-Meat Register.

Methodology

Telephone poll of 692 respondent grocery buyers in NSW/ACT (219), Victoria/Tasmania (199), Queensland (128), South Australia (72), Western Australia (74) as well as a focus groups of mothers, who are the main grocery buyers, across two locations in Sydney.

Key findings on consumer perceptions of factors contributing to beef quality

- Respondents believe they are good at choosing the quality of beef they wish to purchase.
- They also believe the more 'natural' the rearing of the animal the better the eating quality will be, hence they were more likely to choose beef that was organic, contained no additives and was raised in a paddock rather than a feed lot.

- The age of the animal currently plays little role in thinking about the quality and taste of beef.

Key findings on consumer understanding and comprehension of the Retail Beef Register

The report concluded that a significant proportion of consumers will struggle to use the system. They do not understand what specific age each term refers to and the impact this will actually have on the taste experience of beef.

To make the system viable consumers would need to be educated through a major education campaign. The report concluded this would impose a significant cost in order to explain something that consumers are currently not interested in and do not see as relevant.

The respondents considered the terminology as industry focused rather than targeted toward consumers and couched in terms familiar to them. Some indicative responses to the Register were:

“...we don’t know, no one knows whether its good or bad. Whether its young or old. So they would have to expand on those terms.”

“It’s very complicated. Even if you educate me I’m not going to listen. It’s too complicated. I’ve got a screaming baby who I am trying to feed Arrowroots in the trolley.”

“...they’re not thinking the way we are thinking...[it must have been developed by] a farmer obviously. Because he knows all these terms and he feels that everyone should know. He just assumes the population understands.”

Respondents associated the term “mature” with meat from an old animal (this may be compared with the findings of the Millward Brown Australia 2000 study in relation to the “Economy” label, see below). The predominant view was that:

“Mature is a nice way of dressing up the fact that [the beef comes from] an old cow.”

“[The meat is] just old and over chewy”

Analysis

While respondents agreed that tenderness and taste are the key dimensions to evaluate how "good" a piece of beef is, they were confused as to the factors that contribute to tenderness and taste. The study indicates that consumer perceptions of beef eating quality prior to purchase differ widely from the results of actual consumer taste testing conducted, for example, by MSA. Blind consumer taste testing trials indicate consumers in fact prefer meat from animals with feed lot finishing and that organic rearing does not significantly improve eating performance (MLA 1998).

The Delta MV Knowledge Solutions study indicates that elements of the current AUS-Meat Domestic Beef Retail Register are misleading to consumers, leaving them ill equipped to select the product that will best satisfy their needs. The AUS-Meat Register in its current form is insufficient to adequately inform consumers of the nature of the product they are purchasing before they make their decision to buy.

Millward Brown Australia: Consumer Perceptions of Cow Beef

Description

Qualitative consumer research undertaken by Millward Brown Australia in 2000 prior to the introduction of the Budget Beef Voluntary Retail Agreement. The research was conducted for MLA.

Methodology

Testing possible labels for cow beef amongst regular beef buyers in Sydney including:

- "Manufacturing Beef";
- "Casserole Beef";
- "Budget Value"; and
- "Economy".

Key findings in relation to the label “Manufacturing Beef”

Overall, consumers would be strongly deterred from purchasing prime cuts labelled in this way. It is likely that consumers who frequently buy lower grade rump because it is less expensive and because it is perceived as a “versatile” or “utility” cut would be lost to the category all together if this label was used.

Key findings in relation to the label “Casserole Beef”

Meat with the labels “Stewing Beef”, “Casserole Beef” and “Gravy Beef” are generally acceptable to consumers. Consumers believe that beef labelled in this way would be of reasonable quality although not perfectly tender. They are seen as limiting the user to only one method of cooking.

Key findings related to the terms “Economy” and “Budget”

The term “Economy” was considered by respondents to be a much more appealing term than the comparative label “Budget”. Respondents perceived that meat marketed under this label would be a cheaper cut offering reasonable quality for price, and would be suitable for cooking by a variety of methods, whereas “Budget” implies a very cheap cut of meat of poor quality. “Economy” suggests a cheaper cut that would provide good value for money.

Analysis

The clear objective of this study was to ascertain labelling terms that would increase sales of old cow beef, rather than those which would accurately reflect the quality of the product. Hence, terms which cast the product in a positive light were considered ‘acceptable’ and terms which reflected the lower quality of the product were considered ‘unacceptable’.

The “Economy” label was preferred because it gave the impression to respondents that the product represented good value for money, or good quality given the lower price point.

On this basis the methodology of the study was criticised in an AC Nielsen critical assessment commissioned by Hunt Partners. The AC Nielsen assessment criticised the MBA research in that it was more concerned with:

- the detrimental effects of labelling cow beef on the sales of cow beef,

rather than with

- the detrimental effects of *not* labelling cow beef on the beef industry as a whole.

Criticisms were also raised with respect to the sampling and quantitative design of the research.

Meat Research Corporation and Australian Meat and Livestock Corporation: Consumer Surveys

Description

Consumer research conducted by the Meat Research Corporation (MRC) and Australian Meat and Livestock Corporation (AMLC) reported in the MSA Business Plan (MLA 1998).

Key Findings

The research found that buying beef is a lottery in terms of its eating performance and the "report card" delivered by domestic consumers showed that:

- four in ten have difficulty buying beef of the quality they seek;
- six in ten have difficulty knowing which piece of uncooked beef is more tender;
- eight in ten say price is a poor indicator of quality;
- there is no relationship between the beef consumers like the appearance of and the quality they like to eat;
- 20 000 consumer tests on the Brisbane market prior to the launch of MSA demonstrated that up to 50 per cent of retail beef failed consumer requirements for palatability. Even where the "better" product was tested, some 26 per cent failed.

Faced with uncertainty about how beef will perform, consumers factor in a risk premium and an increased tendency to buy competing meat products. However, consumers stated their willingness to buy more beef and pay more for it if satisfaction could be guaranteed.

Analysis

This research into consumer attitudes and perceptions toward beef conducted in 1998 is entirely consistent with the results of the current studies. It shows that consumers are ill equipped to purchase the quality of beef they desire, and that the highly inconsistent quality of beef sold in Australia is having a detrimental impact on prices and consumption. When compared to more recent studies, it is apparent that consumer attitudes have changed little in the last 10 years. Initiatives such as MSA and marketing campaigns have therefore been ineffective in addressing consumer concerns. This would explain the continuing trend decline in domestic per capita consumption since the introduction of MSA.

Objective 2: Cost/Benefit Analysis

GHD Hassall: Benefit Cost Analysis of a Proposed Beef Grading and Labelling Scheme

This was the first benefit cost analysis (BCA) conducted in relation to beef grading, labelling or marketing schemes in Australia.

Description

A BCA of a beef grading and labelling system based on the *Food Amendment (Beef Labelling) Bill 2009* on the assumption that it would be introduced nationally.

Methodology

A model of the current usage of beef production and income was developed with assumptions made on product type, destination (export or domestic) and price. Particular attention was placed on usage of 8 tooth cow beef. An alternative model was developed for a post-Bill scenario.

Key Findings

- Approx 3 million cattle are slaughtered for the Australian domestic market each year.
- Approximately 1.7 million cast for age cows (10 year old cows at the end of their breeding life) are killed in Australia each year and 80% of the prime cuts from those animals are sold onto the Australian market.
- If all the prime cuts from old cows slaughtered in Australia were exported, rather than being sold onto the domestic market, the price of old cows would fall by \$32 a head.
- If some of the cow beef continued to be sold onto the Australian market, the loss per head would be less.
- If cow meat was taken off the Australian market, the price of younger cattle would increase as a consequence of supply and demand.
- If the price for younger cattle rose by 25c per kilo, it would result in an increase in net farm gate price for every animal slaughtered each year of \$40.69 or a net per annum farm gate benefit of \$500 million.
- If the price of younger cattle rose by 50c per kilo, the net farm gate price increase per animal slaughtered would be \$57.80 a head. The per annum gain to the industry of \$667 million.

The report shows that after a 5 year bedding in period:

- If every Australian ate an additional meal of beef every 6 weeks, the payout to the industry would be \$590 million a year.

Objective 3: Comparative International Research

Methodology

Research of academic and governmental publications into the effect of grading systems and slaughter age requirements in comparable international markets.

United Kingdom

The Over Thirty Month (OTM) Rule introduced by the UK Government after the outbreak of BSE in the UK in 1996 prohibited the sale of beef from animals over thirty months of age in the UK between 1996 and 2005.

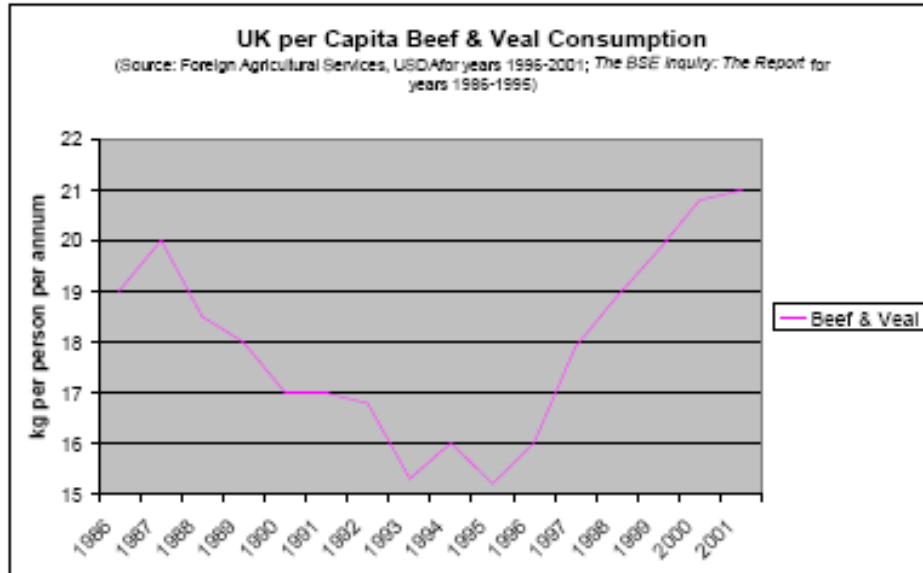
Prior to the introduction of the OTM rule 22% of beef sold in Britain was from cast for age and cull dairy and dairy cows.

Between 1986 and 1995, beef and veal consumption as a share of total meat consumption in the UK declined from 31% to 24% and per capita beef consumption declined by 35% or 6.7 kg per person.

The BSE Inquiry (2000) found that the decline could not be attributed solely to consumer concerns about BSE. The decline was also attributed to the gradual erosion of beef's position in a competitive market by the relatively cheaper prices for pork and poultry.

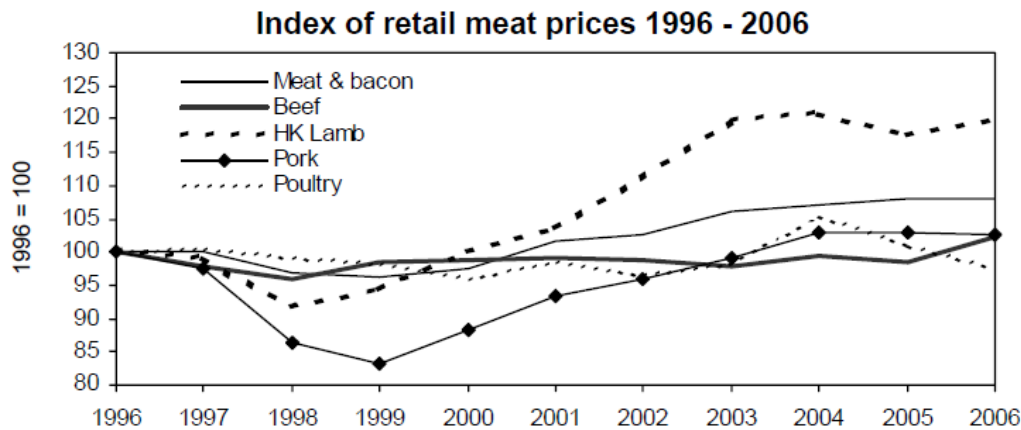
Despite the negative publicity about UK beef following the outbreak of BSE in the UK, in the five years following the introduction of the Over 30 Month Rule, per capita consumption in the UK increased by 5kg or 31% from 16kg per person to 21kg per person and maintained these high levels for the next six years (Eurostat 2010).

A period of recovery was to be expected as the government measures to resolve the crisis took effect and demand normalised. However, beef consumption and expenditure grew well beyond the levels that had occurred during the 1980s and before BSE had affected the market. By comparison, per capita consumption in Australia from 2000 to 2008 was on average around 15% lower than in the 1980s (ABARE 2009).



Household expenditure on beef and veal rose by 33% in the five years following the introduction of the OTM Rule, whereas mutton and lamb expenditure fell slightly and pork expenditure fell by 22% (DEFRA 2002).

Retail prices for beef remained stable between 1996 and 2006. Much of the initial price impact from BSE was absorbed by producers, with the short term fall in farm prices more than doubling that of retail prices. The relative stability of the retail prices and widening farm-retail price spread in this time has been attributed to oligopsonic wholesale markets and the retail dominance of large supermarket chains (Lloyd 2004).



Fisher (2007)

The OTM ban was lifted in 2005, however stringent and burdensome testing requirements continue to apply for beef from animals over 30 months at slaughter. The English Beef and Lamb Executive (EBLEX), the statutory organisation for beef and lamb levy payers in England, has also introduced a Quality Standard scheme which limits the age and status of animals that can be sold by retailers under the scheme. The scheme's requirements focus on key eating quality determinants, particularly the role that age at slaughter plays in beef eating quality. The scheme for beef limits the age and status of animals allowed into the scheme, and places additional requirements on the processing of beef from those animals above a specified age.



The relevant standards are:

- females (of any age) must not have been used for breeding or be in calf (they must be nulliparous and not pregnant);
- bulls must be no older than 20 months at slaughter, unless produced from the dairy herd where this maximum age is reduced to 16 months;
- steers of any age are acceptable;
- prime cuts from carcasses from any acceptable females or steers over thirty months of age must be subjected to one of the specified maturation processes, including adequate high voltage electrical stimulation (HVES) and/or hip suspension and/or maturation. Maturation should be for a minimum of 14 days between slaughter and sale to the final consumer.

These requirements are designed to ensure improved and more consistent eating quality and exclude beef which is likely to be of a more variable eating quality.

Most of England's leading supermarkets are signatories to the scheme ensuring product meeting a minimum standard of quality and consistency is widely available to consumers.

UK domestic beef consumption remains significantly higher than it was before the BSE crisis of the 1990s.

Germany

In Germany the long term impact of the BSE crisis has been more severe. The crisis began in 2000, leading to an immediate 60% reduction in demand for beef.

The German government imposed mandatory testing and bans on meat and bone meal feed, but did not implement an Over Thirty Month Rule.

Although the German response to the crisis was perceived as more effective in addressing health risks than was that of the UK (Beck 2007), beef consumption in Germany never returned to pre BSE levels.

Per capita beef consumption in the UK and Germany, 1991-2007

	1991	1992	1993	1994	1995	1996	1997	1998
Germany	20.6	19.3	19.8	17.5	16.6	15.3	14.5	15.1
UK	19.2	19.5	17.8	18.1	17.6	14.2	16.4	16.2

Source: Eurostat

1999	2000	2001	2002	2003	2004	2005	2006	2007
15.1	14.0	10.0	12.0	12.0	12.0	12.0	13.0	13.0
17.2	17.0	19.0	20.0	15.0	21.0	16.0	21.0	21.0

Eurostat (2010)

Academic analysis of the BSE response in German and Britain concludes this difference can not be explained by the varying effectiveness of the response to the crisis by the German and British Governments. Beck et al (2007) suggests the difference may be attributable to:

- differing cultural attitudes toward public health and food safety issues;
- the removal of beef from old cull cows from the UK market.

United States

The USDA Quality Grades system is a voluntary carcass grading system through which approximately 80% of beef sold at the retail level in the US is graded. Approximately 80% of the cattle slaughtered are under 30 months old and most cattle slaughtered are under 22 months of age.

The system ensures a 94% consumer satisfaction rating for "Prime", 89% for "Choice", 75% for "Select" (formerly termed "Good") and 60% for "Standard" (MLA 1998).

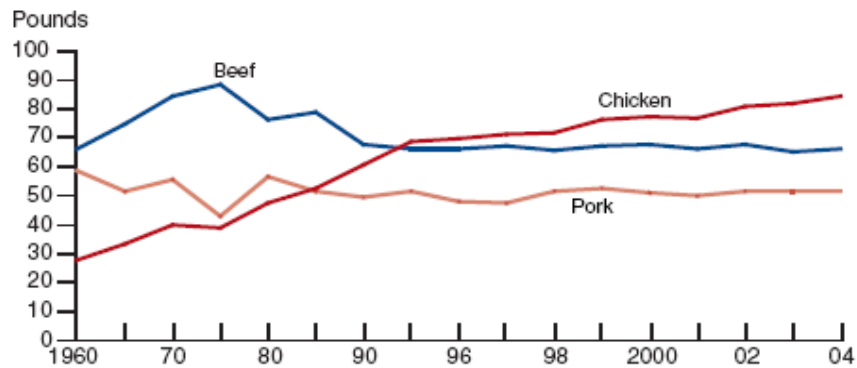
Grading is conducted by Government trained meat graders and is subject to audit processes under the Agricultural Marketing Act, which makes it an offence to sell meat under a USDA label which does not meet the specifications for that grade.

Public awareness of USDA grades is high and the significance of each grade in terms of eating performance is very well understood by consumers.

The US average annual per capita beef consumption of 67 pounds essentially remained constant between 1990 and 2007 (Davis 2005) while in the same period beef consumption in Australia fell by 8.8%.

US per capita disappearance of beef, pork, and chicken,
selected years, retail weight equivalent (pounds)

Year	Beef	Pork	Chicken
<i>Pounds, retail weight equivalent</i>			
1960	66.4	56.3	28.0
1965	74.7	51.5	33.4
1970	84.4	55.4	40.1
1975	88.5	42.9	38.7
1980	76.4	56.8	47.4
1985	79.0	51.5	52.5
1990	67.5	49.4	60.6
1995	66.1	51.5	68.9
1996	66.4	48.1	69.7
1997	67.0	47.6	71.4
1998	65.5	51.3	71.9
1999	67.3	52.5	76.4
2000	67.5	50.8	77.4
2001	66.0	50.0	77.0
2002	67.5	51.3	81.0
2003	64.9	51.7	82.0
2004	66.1	51.3	84.3



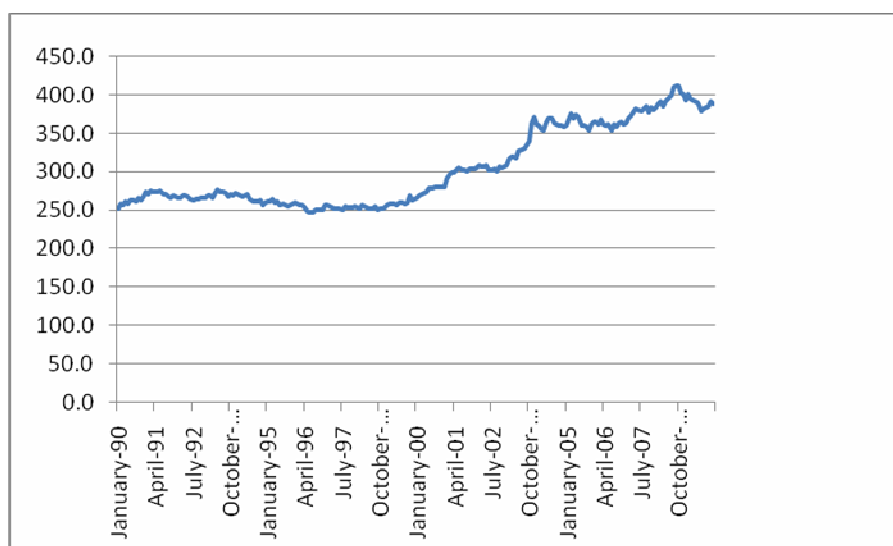
U.S. Department of Agriculture, Economic Research Service, in Davis (2005).

Recent per capita beef consumption in the US (Pounds)

2004	2005	2006	2007	2008	2009
66.1	65	65	66	NA	61

USDA Economic Research Service

US Fresh Beef Retail Value (cents/pound)



USDA Data Set, Meat Price Spreads

The sharp fall in US beef consumption in 2009 has been attributed to high unemployment in the US (reaching 10% in 2009) as a result of recession and the Global Financial Crisis (for comment on the correspondence between income levels and beef consumption see Haley 2001).

While Australian consumption has experienced a greater decline in consumption in the last two years than the US market, there has been no recession or high unemployment which could otherwise account for the fall.

Historical Trends in US Beef Consumption

Between the 1970s and 1990 US beef consumption trended downward. Much of the early decline in this period can be attributed to normalisation following the record high of 94.3 pounds in 1976 and the associated price crash which induced mass slaughters in the US (as in Australia at this time). Consumption stabilised during the early 1980s at around 75 lb per capita before falling again up until the early 1990s.

There were two major restructures of the USDA in this period which (unsuccessfully) attempted to halt the decline.

The first of these occurred in 1976 when the USDA instituted a new set of grade standards in response to the mid-1970s crisis. Industry yielded to claims by consumer advocate groups that heavy marbling in U.S. beef cuts was causing health-conscious consumers to reduce beef consumption.

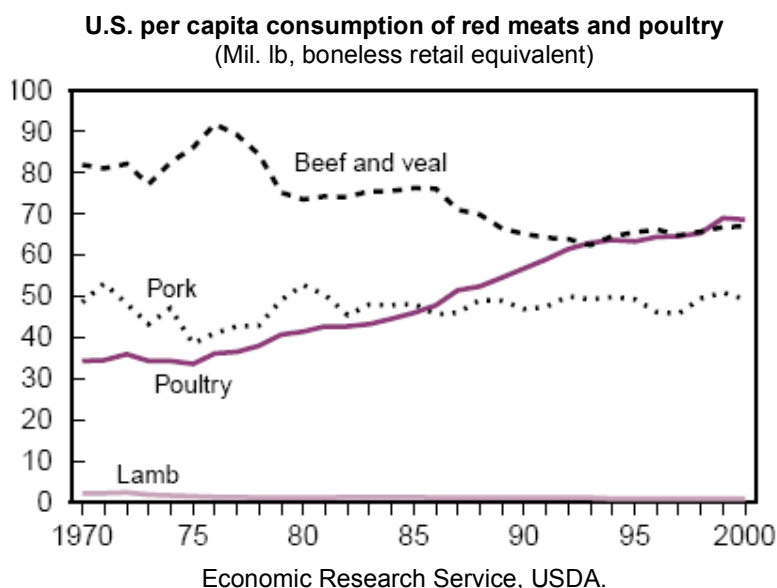
Industry groups advocated for a lowering of the USDA grade standards to enable carcasses with less marbling to qualify for higher grade categories. Hence some carcasses that on the basis of marbling would only have graded "Select" under the old grade standard (or "Good" as it was called at that time), would grade "Choice" under the new set of grade standards.

Research suggests that the availability and promotion of leaner beef, in general, had no positive effect on consumer demand. For example, Nelson (1977) found that "overall demand for beef has not been affected" by the revised set of U.S. grade standards.

In fact current research shows that US consumers now demand consistently flavoursome, tender, and juicy beef—characteristics associated with a relatively high degree of marbling (Haley 2001). In responding to demand for these characteristics, an increasing number of US producers and retailers

have instituted their own “branded products” lines of beef which involve identity preservation of animal characteristics from the producer level of the marketing chain through to the retailer. Branded beef product lines are in some cases supplanting the weakened US grade standards which are less effective in ensuring consumer satisfaction than they previously had been (Haley 2001).

Beef processors are also attempting to replicate the success of the poultry industry by developing and marketing beef products that economise on preparation time. Marinated, spiced, partially cooked cuts of beef are becoming more readily available at retail outlets. The US beef industry has also recently engaged in generic advertising campaigns .



The second structural change occurred in 1987, when the USDA official standards were revised to change the name of the then USDA “Good” grade to USDA “Select”. Unlike the previous changes, the revision did not alter the requirements for the grade, only the grade name.

The change followed the results of the industry sponsored National Consumer Beef Study 1985, which showed that consumers were not responding positively to product labelled “Good”. Initial marketing research suggested that demand for product graded “Good” could be increased by changing the label to “Select” and marketing it as a leaner beef option. The research suggested that beef marketed in this way could attract a price premium.

Various US beef associations were interested in increasing demand for intermediate quality beef and petitioned for the change. Part of the marketing shift involved a consumer “re-education” campaign designed to encourage consumers to prefer the lower quality “Select” meat which was leaner but less tender, less flavoursome and contained less intramuscular fat or marbling.

The effect has been that far more beef has been sold under the “Select” label than was ever sold as “Good”. In 1986 2.7% of beef graded was labelled “Good”, ten years later in 1996 37.1% of all product graded was labelled “Select” (Norkus 1988; USDA).

USDA Grade Distribution 1986

EXHIBIT 1		
Grade distribution of top-quality beef in 1986		
USDA Grade	% of total	Pounds in thousands
Prime	3.1%	399,869
Choice	94.1%	12,052,782
Good	2.7%	344,056
Standard	<0.1%*	5,908
Total		12,802,615

*Rounded to add to 100%.
 Source: *Livestock Market News*, Livestock Division, Agricultural Marketing Service, USDA, 55, No. 10 (March 7, 1987), p. 23.

USDA Grade Distribution 1996

PRIME	6,149	91,571	187,259	14,808	1,403	130,204	431,393	2.4	2.1
CHOICE	665,424	4,411,414	4,441,983	215,634	18,989	1,210,257	10,983,680	80.4	53.2
SELECT	1,079,766	3,220,035	1,519,192	29,533	1,692	885,233	6,735,450	37.1	32.7
STANDARD	42	59	12	0	0	1,033	1,148	0.0	0.0
COMMERCIAL	5	288	474	2	0	302	1,053	0.0	
UTILITY	188	3,749	1,917	1	0	1,244	7,098	0.0	
CUTTER	0	1	6	0	0	0	7	0.0	
CANNER	2	4	2	0	0	0	8	0.0	
YIELD ONLY	478,764	689,562	388,105	11,899	924				
TOTAL YIELD GRADED THIS PERIOD	2,230,340	8,416,683	6,518,929	271,875	23,008				
% OF ALL YIELD GRADED	12.8	48.2	37.3	1.8	0.1				

O'Connell (2003) argues the long term effect has been to reduce the overall quality of USDA graded meat and weaken confidence in the system. Although the US per capita beef consumption has remained constant over the past 20 years, it has remained around 5kg (12 lb) lower than pre-1986 levels.

Nevertheless, per capita beef consumption in the US remains the third highest in the world (following Argentina and Uruguay). The effect of the label change on the USDA Grading System was not more severe because beef labelled "Select" is still of relatively good quality and satisfies consumer palatability requirements at a rate of 75%.

Americans are generally regarded as having an advantage in international markets because of their grading system which delivers consistent quality in each grade and the volume and relatively high quality of all the product sold.

MLA has suggested that a strategy to ensure a similar level of quality consistency in Australia could be a key differentiator and demand driver for Australian product overseas (MLA 2010).

Japan

The Japanese system has 5 quality grades for carcasses which are based on marbling, yield, firmness and texture, meat colour and fat quality:

1 = Poor

2 = Below Average

3 = Average

4 = Good

5 = Excellent

Equivalence of U.S. and Japanese Marbling Scores

U.S.D.A. Quality Grade	U.S.D.A. Marbling Score*	BMS Number	Japanese Quality Grade
	Extremely Abundant 50+	11 or 12	5
	Extremely Abundant 0-49	10	5
	Very Abundant 50-99	9	5
	Very Abundant 0-49	8	5
	Abundant	7	4
	Moderately Abundant	6	4
Prime	Slightly Abundant	5	3
	Moderate	4	3
	Modest	3	3
Choice	Small		
Select	Slight		
	Traces		

- There are no official grades above Abundant in the USDA specifications. The terms Very Abundant and Extremely Abundant are arbitrary.

The marbling scores of the top quality grades is extremely high and extend well above the USDA marbling specifications.

Canada

The Canadian carcass-based beef grading system began in 1929 but has undergone major changes in the last 20 years to improve the accuracy of quality and yield assessments.

The Canadian system is a voluntary carcass-based system and approximately 85% of the 3 million federally-inspected beef carcasses processed in Canada were graded in 2008. Grade standards and regulations are enforced by the Canadian Food Inspection Agency employees.

The four highest quality grades, Canada A, Canada AA, Canada AAA, Canada Prime, represent 88% of all carcasses graded.

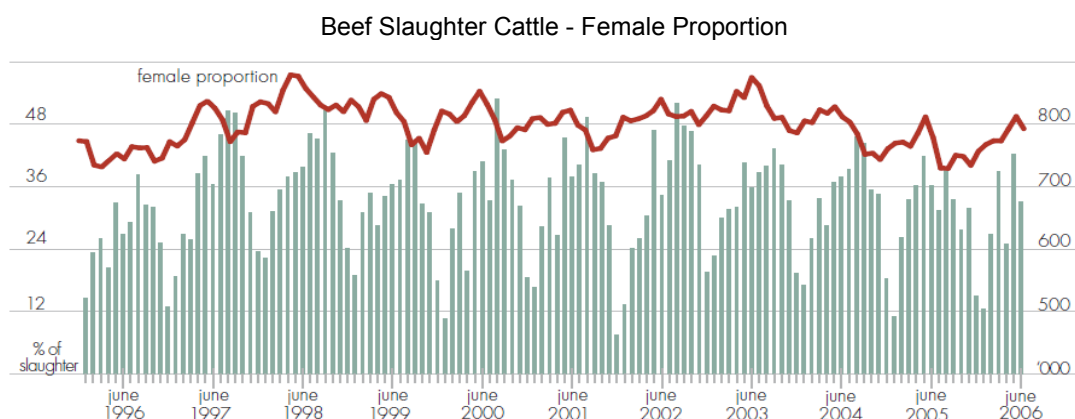
Cow beef (Canada D grades, normally referred to as cow or commercial grades) represents 10% of the total graded carcasses although a large proportion of the ungraded carcasses are likely to be cow beef.

A drawback of the Canadian system is that grade labels not required at retail and hence are utilised more as a trade rather than consumer language.

Australia

Most beef consumed by Australians is ungraded and MLA research shows that 50% of this product will not meet consumer satisfaction standards (MLA 1998).

The GHD Hassall Report found that 80% of the prime cuts from 1.7 Million cast for age cows are sold in Australia each year. This gives credibility to the anecdotal reports of industry sources such as Peter White, former joint CEO of AMH, which indicate that 30% of prime cuts sold in Australia come from cast for age cows at the end of their breeding life.



MLA (2006)

Since 1997 per capita consumption in Australia has declined by 17.4%, and is forecast to fall by nearly 20% by 2015.

Disproportionate retail prices are paid for cow beef when compared with beef from yearling and young steers and this distortion is reflected in cattle prices (see GHD Hassall Benefit Cost Analysis).

Per capita beef consumption in Australia 1990-2015 (kg)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
40.1	38.5	37.2	37	38.8	36	39.3	41.3	38.3	37.9	37.7	34.5	36.9

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
37.7	37.6	36.7	38	37.9	35.1	33.7	*34.0f	33.3f	33.0f	32.6f	32.2f	31.8f

ABARE f: MLA forecast *ABARE figure for 2008-09: 32.7

Conclusions

There is a strong correlation between countries where few or none of the prime cuts sold come from animals over 30 months of age and where beef consumption has remained stable or increased over the last 20 years. Consumers in Australia's export markets in Asia, UK and America do not eat prime cuts from animals over 30 months in significant quantities, and meat from cast for age cows is used for mincing only. It is only in Australia that prime cuts from cast for age cows are sold to consumers in large quantities.

The variability or inconsistency in eating quality of beef sold in Australia has been identified by MLA as a significant impediment to demand growth (MLA 2010) and the biggest contributor to this inconsistency is the abundance of old cow beef sold as prime cuts.

By contrast, the consistency of beef sold in the foreign markets referred to above is far higher than Australia in part because comparatively few or none of the prime cuts sold come from cast for age cows. In the UK this was the unintended result of the OTM Rule between 1996 and 2005 and has continued as a result of the ongoing OTM testing requirements and the Quality Standard scheme. In the US the USDA whole of market grading system allows consumers to accurately determine the quality of the beef they purchase and guarantees consistency. The system enables market signals to be accurately sent to processors and producers, with the consequence that around 80% of the prime cuts sold at retail level are USDA graded and under 30 months.

In Australia, the market is distorted by poor consumer awareness of the contributors to eating quality and the absence of meaningful product quality labels. The distortion is reflected in the premium obtained by retailers for poorly labelled, low quality cow beef, and in the inflated prices obtained for cast for age cows (GHD Hassall 2010).

The decline in per capita consumption is unique to Australia and other comparable countries where beef from mature or cast for age cows continues to be sold on a large scale.

Objective 4: Carcase Grading Trials

Milestone 5 of the Bindaree PIP funding application involved taste testing programs for a carcase beef grading system, based on a system developed by MSA as a precursor to the current MSA cuts-based grading system. The objective was to compare the eating performance of the carcase-based system with the performance of the cuts-based system and other comparable grading systems.

Briefs were prepared and delivered to Sensory Solutions and MLA. One of the founders of MSA and chairman of the MSA Steering Committee, Rod Polkinghorne, had agreed to act as project manager. MLA had also agreed to allow the MSA test data to be used for comparison with the results of the Bindaree PIP carcase grading taste test trials.

However, prior to testing MLA leaked the initial test carcase grading specification schedule (Schedule 3 which had been developed in consultation with major Australian retailers and respected MSA graders) to industry representing Schedule 3 as a concluded proposal. MLA then insisted that the results of the taste testing be submitted for their screening and approval before it could be made available for the Bindaree PIP and circulation to AMPC and industry.

The MLA response raised concerns that the proposed comparative testing may be compromised by MLA involvement and consequently the taste testing trial was terminated before any testing was carried out.

1998 MSA Brisbane Pilot Carcase Grading Trial

Tests were conducted on an MSA carcase-based grading scheme (MSA Carcase Grading) during a trial in Brisbane in 1998 found there was a high degree of consumer satisfaction with the carcase grading system.

The scheme involved the grading of carcasses through specified carcass pathways for each grade, with only the high value grilling cuts (about 20% of the carcass) being labelled MSA at retail.

The following tests and results were recorded:

- a consumer survey conducted with 600 exit interviews at supermarkets in June 1998 showing 94% of supermarket consumers were satisfied with the MSA Carcass Graded product (85% "were very satisfied" and 14% "fairly satisfied");
- a consumer survey of 583 restaurant diners in March and May 1998 showing 82% of diners who ate 3 star beef and 99% who ate 4 star beef rated their experience as "better than everyday" or "superior";
- a survey of butchers and supermarkets found support from participating retailers was high with most wanting to continue the scheme and over 66% of supermarket shops said that they would buy graded beef in the future with 80% being prepared to pay a premium;
- an Independent Assessment Team collection of price data from participating retailers in January to May 1998 found price premiums of between \$1 and \$5 were obtained for 3 Star beef over non-MSA beef and a further \$3 per kilogram was obtained for 4 star beef above the 3 star premium.

A survey of food service diners found that:

The consumer satisfaction results are equivalent to the satisfaction rates for USDA Quality Grades which are applied to almost 80% of US domestic product.

Conclusions

The MSA Carcass grading system ensures a high degree of consumer satisfaction equivalent to the USDA system. While it is slightly less precise than the MSA Cuts-Based system, the lower cost and ease of implementation is a significant advantage.

Although the uptake of MSA is increasing, the overall quantity of product that is graded remains low. This would account for the low consumer awareness of MSA as established in the Newspoll Study.

Most beef consumed by Australians is ungraded and according to the MSA 1998 Business Plan 50% of this product will not meet consumer satisfaction standards.

MSA Carcass Grading could be a viable alternative system to fill the gap between the minority of MSA Cuts-Based graded product at the top end of the market and the large quantity of ungraded product in the intermediate and lower quality ranges which fail the stringent MSA criteria.

Project Conclusions and Outcomes

Legislative Reforms

In December 2009 the Parliament of NSW passed the *Food Amendment (Beef Labelling) Act 2009* ("the Act") which regulates the retail labelling of beef products in NSW.

The Act came into force on 1 September 2010, following the advice of a reference group established by the Minister for Primary Industries representing Australian producer, processor and retail interests.

The Act amends the *Food Act 2003*, inserting a number of new provisions including:

- a requirement that any retailer who adopts AUS-Meat language use that language consistently;
- a requirement that beef which is advertised, packaged or labelled with the word "Manufacturing" must also include the words "Suitable for Mince Only";
- a requirement that beef which is advertised, packaged or labelled with the word "Budget" must also include the words "Low Grade" or "Low Quality";
- the power to establish a voluntary beef grading scheme which would provide alternative labelling requirements to those listed above.

The AUS-Meat language is set out in the AUS-Meat Domestic Retail Beef Register (Second Edition, Version 2, 12 July 2010).

In relation to labelling of beef for retail sale, the register requires that:

"The description used for all Beef sold within any retail business must be sufficiently precise to inform the purchaser of the true nature of the meat and to enable the meat to be distinguished from products with which it could be confused."

An amended version of the Retail Beef Register was approved by the Ministerial Reference Group and was released on 12 July 2010.

The following additional Retail Beef Classification labels were included in the updated Register:

- "Yearling" (zero (0) permanent incisor teeth);
- "Young" (no more than two (2) permanent incisor teeth);
- "Intermediate" (no more than four (4) permanent incisor teeth);
- "Mature" (no more than seven (7) permanent incisor teeth);
- "Economy" (8 permanent incisor teeth and satisfies meat colour and fat colour requirements);

The legislation, which was sponsored by the Speaker of the NSW Legislative Assembly and Member for New England Richard Torbay, is the first of its kind in Australia and vastly improves the information available to NSW consumers when making purchase decisions.

The scheme makes provision for auditing and imposes fines of up to \$55,000 for individuals and \$275,000 for companies who do not consistently apply the AUS-Meat language.

Aims of the legislation

The aims of the legislation were summarised by the then NSW Minister for Primary Industries, Tony Kelly, in his second reading speech for the Bill as follows:

The Bill aims to address the issue of beef labelling by promoting consistent, consumer-orientated labelling systems that will inform consumer choices in relation to the quality of beef products. In this way it directly confronts an issue that has hamstrung the beef industry for decades. Inaccurate or deceptive labelling of beef has affected the market for high-quality beef produced in New South Wales. These labelling issues may have also contributed to the overall decline in red meat consumption as consumers react to inconsistent quality... This reduction impacts on the viability of the red meat industry.

The Bill now amends the Food Act 2003 to make it an offence in New South Wales to advertise, package or label beef using the word "budget" if the advertising labelling or packaging does not also include the words "low grade" or "low quality". It further amends the Food Act 2003 to make it an offence for any retailer in New South Wales to advertise, package or label beef using the word "manufacturing" if the advertising, packaging or labelling does not also include the words "suitable for mince only". [This provision] will help overcome the confusion in the market around lower-priced products and will go a long way to addressing truth-in-labelling concerns.

The Red Meat Advisory Council has asked that Meat Standards Australia [MSA] graded product from animals with eight teeth be excluded from the "budget" category. The member for Northern Tablelands has agreed with this proposition subject to appropriate improvements to MSA integrity as a result of the MSA integrity review being undertaken by the Australian Meat Industry Council and Meat and Livestock Australia.

These changes would mean that the only beef remaining in the budget category are cuts that are unlikely to eat well no matter how they are cooked. In other words, this beef is likely to deliver a bad eating experience no matter how it is cooked. Remember, this is beef that has actually failed the grade. The Opposition can put whatever spin it wants on this but most consumers will call this low-grade or low-quality beef. Of course, this beef can be used for mincing, in which event there would be no need to label it as "Budget".

Beneficial Aspects of the Legislation

The Act extends the AUS-Meat language, which had previously applied to beef processors only, to NSW retailers of beef.

Whereas export abattoirs have been required to label the beef that leaves their abattoir in accord with AUS-Meat language for over 20 years, no such requirement has previously applied to retailers.

That is, retailers throughout Australia have been able to purchase beef labelled "PR" (6 tooth) and "Budget" (8 tooth) from AUS-Meat accredited abattoirs and sell the better meat and fat coloured cuts to consumers as yearling. Since the NSW legislation came into effect on 1 September 2010 retailers in NSW will no longer be able to do so.

Similarly, the "Manufacturing (Suitable for Mince Only)" label now applies to NSW retailers and not just processors. Retailers can no longer purchase product that was mandatorily labelled manufacturing from the AUS-Meat accredited processor and achieve a premium price by labelling it "Budget", "Economy", or "Special" or simply as "Porterhouse", "Scotch Fillet" or "Rump". The worst of the 8 tooth beef sold in NSW will now be labelled clearly and truthfully. Manufacturing beef currently accounts for around half of the 8 tooth beef sold (GHD Hassall 2010).

Importantly, ambiguous terminologies such as "Prime", "Export A", "Export Quality" have been specifically prohibited.

Provided that proper audit and enforcement provisions are put in place, the legislation will bring to an end a number of practices that had previously been used to misdescribe low quality beef.

Drawbacks of the Legislation

While there are many beneficial elements of the new legislation, there are some significant drawbacks which require further attention.

The AUS-Meat language referenced by the Act is a modified version of the scheme presented to respondents in the Delta MV Knowledge Solutions study of May 2010 (see Objective 2).

Respondents in that study were unclear about the definitions of terms such as “Yearling”, “Young” and “Intermediate”. The study concluded that significant proportion of consumers would find it difficult to understand what specific age each term refers to and the impact this will have on the taste experience of the beef. The study suggested a major education campaign would be necessary to render the labels meaningful.

The term “Economy” is particularly confusing in the context of a labelling scheme based on age and where the other descriptors are more clearly referable to that characteristic. The Millward and Brown (2000) research shows that the term “Economy” is generally associated with value and consumers are unlikely to consider understand this label denotes product from the oldest animals in a hierarchy based on age.

The research shows that consumers understand the term to refer to a cheaper cut, but one that still offers good quality for the price. It presents the product in a better light than the label required for 6 tooth product, “Mature”, and the label previously used for 8 tooth product, “Budget”.

The consumer research indicates the term “Economy” is not sufficiently precise to inform the purchaser of the true nature of the meat or to enable the meat to be distinguished from products with which it could be confused.

Weakening of the “Budget” Beef Provision

The Act inserts a new section 23B(1)(c) into the *Food Act 2003* which provides that beef which is advertised, packaged or labelled with the word “Budget” must include the words “Low Grade” or “Low Quality”.

In its original form, the AUS-Meat language prescribed the term “Budget” for 8 tooth product. In order to apply the AUS-Meat language consistently (as required under the Act) and comply with the new s 23B(1)(c) of the Act a retailer would have to label all 8 tooth product “Budget Low Quality” or “Budget Low Grade” (or else “Manufacturing (Suitable for Mince Only)”).

This provision was intended to address concerns regarding the labelling of 8 tooth product as “Budget” under the Voluntary Beef Retail Labelling Agreement between the Meat and Livestock Authority, major supermarket chains and some independent butchers.

The 2009 Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into Meat Marketing criticised this arrangement and found that the use of the word “Budget” was “at best confusing and at worst misleading” to consumers. The Senate Committee recommended that the Government investigate the most appropriate legislative pathway to ensure that beef from animals with more than eight teeth be required by law to be labelled “old cow beef”.

The Senate Committee's concerns appear to be justified when considered in light of the findings of the Bindaree PIP that:

- the majority of 8 tooth product comes from cast for age beef and dairy cows at the end of their breeding or milking life;
- approximately 1.7 million cast for age cows are killed in Australia each year and that 80% of the prime cuts from those animals are sold onto the Australian market, representing about 30% of retail sales; and
- in no comparable international market is beef from cast for age cows sold as prime cuts in any significant quantity.

The provisions within the Act relating to the term "Budget" would have given effect to the Senate Committee's recommendations and would likely have reduced the quantity of old cow beef sold as prime cuts, bringing NSW more in line with international markets.

However, before the Act came into force the AUS-Meat language was changed to replace the term "Budget" for 8 tooth product with "Economy". The amended AUS-Meat Domestic Retail Beef Register (Second Edition, Version 2, 12 July 2010) was prescribed by the Minister for Primary Industries, Steve Whan, under the *Food Amendment (Beef Labelling) Regulation 2010*.

The effect is that retailers can comply with the new AUS-Meat language and the provisions of the Act without having to include the words "Low Grade" or "Low Quality" when labelling 8 tooth product.

The changes to the AUS-Meat language were recommended by the Ministerial Reference Group after the Act had been passed by both Houses of Parliament but before it was proclaimed.

Considerations of the Minister's Reference Group

The Bindaree Beef PIP research was made available to the Reference Group, including the consumer research showing that the labelling scheme under the modified Retail Beef Register, and particularly the "Economy" label, will be confusing and will not adequately inform consumers as to the nature of the product they are purchasing.

The Reference Group disregarded this aspect of the consumer research in endorsing the use of the "Economy" label for 8 tooth cow meat. It is likely that the term was approved on the basis that it presented the product as good value while not revealing that it is of low quality and (probably) comes from a cast for age cow.

For example, the Reference Group considered it appropriate for 6 tooth product to be labelled "Mature", but objected to the older (and in fact physiologically mature) 8 tooth product being labelled under the same term. When asked how this position could be justified, one representative of a major retailer responded:

"We sell an awful lot of 8 tooth product, but very little 6 tooth."

In other words, it was important to the retailer to have an appealing label for the lower quality, high volume product. A label such as "Mature" which indicated the relative age of the animal was unacceptable for 8 tooth product as it may suggest to the consumer that the beef came from an older animal and may be chewier and of lower eating quality than beef labelled under the other classifications in the Ausmeat Domestic Retail Beef Register.

Cow Beef Truth in Labelling Conclusion

The outcome of the decision to label the better quality cow beef "Economy" rather than "Budget" is that NSW retailers will be able to promote the consumption of meat from cast for age cows by concealing the age of the animal and presenting the product as good value for money.

Consequently variable quality cow beef prime cuts, many of which will be chewy and tasteless, will continue to be sold to consumers who won't understand the nature of the product that they are buying. Consequently consumers will continue to be dissatisfied with the eating quality consistency of beef as a product and buy less beef and more pork and chicken.

Media Response

The intention behind the Act to provide greater consumer protection with respect to labelling of beef products has been widely applauded by media commentators. However, elements of the updated AUS-Meat retail language, particularly the use of the term "Economy" to describe beef from cast for age cows, have come under criticism.

Below are some relevant examples of the media commentary.

Radio

Alan Jones voiced the following concerns about the use of this term on his 2GB Breakfast Show on 31 August 2010:

"“Economy”...is even more ambiguous as a term to describe the cow beef than “Budget” and...the switch of terms from “Budget” to “Economy” represents nothing more than a sell out of the IGAs, the Coles and the BI-Lows of this world at the expense of producers and consumers and...consumption has been falling through the floor for years because of inconsistent and mislabelled product."

"There are some outfits that would love this labelling because...firstly they can buy the old stuff in the sale yard, they are no good for breeding, they can buy it as cheap as dirt and they can then label it as “Economy” and everyone thinks in the market place “hey this is the stuff to buy, “Economy stuff”, so they buy it cheaply. They can sell it well but at the end of the day it’s got no taste, you can’t chew the dammed stuff and people are turned off beef as a result. Is this labelling a consequence of big business heavying bureaucrat and government?"

Newspapers

A *Financial Review* feature article, “Meet modern meat: traditions get butchered” published 11 September 2010, reported on the growing market for high quality and consistent meat being exploited by butchers such as Hudson Meats and Super Butcher. The article suggested this growth area was being held back by inadequate labelling laws:

One of the main drawbacks in the development of a food culture around meat has been the lack of labelling laws for consumers.

Critics complain that the labels are confusing, especially the use of “mature” for the second oldest beef and do not reflect all the factors that affect eating quality.

A *Sydney Morning Herald* Article, “It’s just old cow meat by another name” (Singer 2010) was critical of the process through which the AUS-Meat register was changed to weaken the effect of the *Food Amendment (Beef Labelling) Act 2009*:

“Steaks from old cows will be labelled “economy” instead of “low grade” after industry heavyweights mustered support for a weakening of new laws designed to help shoppers understand beef quality.”

“...the architect of the original truth-in-labelling bill, the independent MP Richard Torbay, has lodged a late bid to have the term “mature” used instead of “economy” to label the oldest beef on the market.”

Television

Today Tonight aired a story responding to the new legislation on Wednesday, 4th August, 2010. The program applauded the intent of the Act to address the undisclosed sale of old cow beef to consumers and particularly the abolition of the terms such as “Budget”, “A-grade” and “Export quality” as a means of misdescribing inferior quality beef. There was however significant criticism of the new “Economy” label which simply replaced one misleading term for old cow beef with another.

Online

A Nine MSN article “NSW Gets new beef labelling laws” (1 December 2009) quoted the views of then Minister Tony Kelly that:

“People should be able to purchase the quality of beef they are looking for at a price that matches the quality... it is only fair that the best quality beef commands a premium price and that beef sourced from an older cow is cheaper.”

MLA Response

MLA accepts that variability in eating quality represents a significant impediment to demand growth in the Australian domestic beef market and that a system which improves consistency may facilitate product differentiation and drive demand for Australian product overseas.

The MLA Strategic Plan 2010-2015 identifies inconsistent quality as a as a sets the goal of"

The history of the food industry has taught us that a high level of consumer confidence is required for category success.

Variables inherent in a fresh product, and the complexities of producing beef, sheepmeat and goatmeat in a range of environments, means this remains a particular challenge for the meat industry globally.

It identifies improvements in eating quality consistency of Australian beef as an important contributor to demand growth in both domestic and export markets:

For Australia's red meat industry, variability in eating quality has been previously identified as a significant impediment to demand growth. Additionally, competition from lower cost suppliers means that more consistent eating quality can be a key differentiator and demand driver for Australian product overseas.

The specific aims of MLA over the next five years are:

- to partner with industry to reduce failure rates against consumer and customer expectations
- to position Australian product based on eating quality descriptions;
- to enhance broad industry understanding of the factors that contribute to eating quality;
- to improve the free flow of information across the value chain , stretching from producer through to consumer, and including processors;
- to develop new processing technologies and interventions that support and enhance eating quality.

MLA has responded to industry concerns about the weak outlook for the domestic market by announcing a new \$5 million marketing strategy. The new approach follows the appointment of Glen Fiest to replace David Thomason as MLA Marketing General Manager.

The campaign includes television, print and point of sale advertisements which draw on the emotional bond Australian consumers have with Australian beef and seek to remind consumers of beef's desirability and its superior quality.

However, the comparative international research conducted under this PIP shows that Australian retailers sell far higher quantities of prime cuts from low quality cast for age cows than retailers in comparable international markets.

The 1998 MSA Business Plan found that ungraded beef sold in Australia would fail to meet a minimum standard of consumer palatability and satisfaction at a rate of 50%.

While the MLA marketing strategy promotes the quality of Australian beef, it does not provide a framework to ensure the product meets acceptable eating quality standards. Without a scheme that ensures a minimum level of quality and consistency of eating quality to the consumer, the \$5 million marketing strategy is unlikely to deliver a long term benefit to the beef industry.

Alternative Beef Grading Views

Market Forces

There is an industry view that it should be left to the market to determine the quality of the beef that is available to consumers on the domestic market and the terminology by which it is labelled. It is suggested that if a retailer sells poor quality beef or consistently mislabels product, it is open to consumers to buy their beef from competing retailers which offer the desired quality and consistency.

This view is based on a number of assumptions that are not supported by the research outlined in this report.

The market forces argument assumes an efficient and competitive retail market whereas in fact the retail market for beef is far less competitive than it was 20 years ago with over 50% of all retail beef purchased in Australia now sold by Woolworths or Coles.

New entrants into the retail market, including boutique and high quality specialist retailers, may go some way toward increasing the availability of higher quality competing retailers, although the growth of this sector is being held back by the lack of uniform grading and labelling standards.

This argument also assumes consumers have sufficient product knowledge to identify the quality of meat they require and to identify better quality product from a competing retailer. The research conducted by Delta MV Knowledge Solutions, "Beef Retail Classification Research" (May 2010), indicates that consumers are ill equipped to identify characteristics that will contribute toward a positive eating experience. While they generally agree that flavour and tenderness are the key dimensions to eating quality, consumers are confused as to the factors that contribute to these characteristics.

The result is that consumers are left with a "try and see" approach to purchasing beef. The "lucky-dip" effect is particularly problematic in Australia because such a large percentage of prime cuts come from cast for age cows and prime cuts from old cows are often chewy and tasteless and at best of variable eating quality. Given that such a high percentage of beef purchases will fail to meet consumer expectations, it is unreasonable to assume that consumers will attribute a bad experience to an individual retailer but not reduce overall demand for the product itself.

The reality is that competition exists between meat types and not just between retailers of beef. The per capita consumption data shows that consumers have shifted to competing products such as pork and chicken, which have a higher relative eating quality and consistency, resulting in a net and continuing decline in per capita beef consumption.

While there are numerous factors contributing to this shift, it cannot be denied that the continual flood of poor and inconsistent quality ungraded beef on Australian domestic market has played a significant role. In comparable international markets which sell little or no old cow beef or have effective grading systems there has been no equivalent shift. In such countries (e.g. the UK and US), growth in competing meats has been in addition to, and not detracted from, consumption of beef, which has remained stable or increased over the past 20 years.

In Australia, as in the US, there has been an increase in the total consumption of red and white meat protein since the 1990's. In 1997 Australia's total meat consumption (beef, lamb, pork and chicken) was 106kgs per person by 2007 Australian total meat consumption had increased to 116kg per person and by 2008 (presumably as a consequence of the GFC) total Australian meat consumption had fallen back to 110kgs per person. The gains in white meat, (chicken and pork) consumption since 1997 have been at the expense of per capita beef consumption which has declined by over 15% since 1997 whilst annual per person chicken consumption increased by 29% and annual per person pork consumption by 31% in the same period.

In the US total meat consumption (beef, lamb, pork and chicken) increased from 150.7 pounds per person in 1960 to 201.7 pounds per person by 2004. Whilst per capita beef consumption between

1997 and 2007 remained static (67 pounds beef consumption 1997 and 66 pounds beef consumption in 2007) whilst per capita chicken consumption increased by 80% (or from 71.4 pounds per person 1997 to 84.3 pounds per person in 2004) during the same period.

The MSA Business Plan produced by MLA in 1998 found that Australian consumers are dissatisfied with beef as a product and "[were] reacting to beef's uncertain and unpredictable eating quality by reducing their beef consumption". Consumer taste testing found that 50% of beef sold at retail level failed consumer requirements for palatability and the MSA Business Plan identified inconsistency as a key factor driving consumers away from beef (MLA 1998). The economic analysis by GHD Hassall confirms that cow beef comprised a very significant percentage of the prime cuts sold in Australia and that despite the uptake of MSA that the overall consistency of most of the beef consumed by Australians has not significantly improved since 1988.

The market in Australia has not driven retailers to provide a product of sufficient quality and consistency that is acceptable to consumers, nor has it been effective to halt the decline in consumption. To the contrary, there is short term incentive for individual retailers to market lower quality beef in a manner that is appealing to consumers and can attract a price premium.

The effect of individual retailers engaging in this short term profit maximising activity is to reduce the overall consistency and quality of beef sold in Australia, which has had the long term effect of weakening demand and driving a shift to more consistent competing meats such as chicken and pork.

This is a clear case of market failure and one in which government intervention is appropriate.

Total Finite Meat Consumption Capacity

The argument put forward is that the total Australian meat consumption (beef, lamb, pork and chicken) is static and that a gain in per capita consumption of one type of meat sold to the decline in per capita consumption of another is not supported by the facts. In 1967 total meat consumption in Australia (beef, lamb, pork and chicken) is 101.8 kg per person and with Australians eating 41.3 kg of beef a year. In 1990 in the midst of the beef industry collapse with a lot of cheap beef being flooded on the Australian market a total of Australian meat consumption was 118.5 kg per person with per capita beef consumption reaching an all time high of 70.3 kg per person. By 1997 the total Australian meat consumption had fallen back to 103.4 kg per person however the total Australian meat consumption was 106 kg per person and by 2007 it had declined back to 116 kg per person.

In other words, despite claims to the contrary, an increase in consumption of one type of meat is not necessarily at the expense of a decline in consumption of another. It is possible to increase the size of the total meat "pie" by supplying eating quality consistent product to the market.

This has been the experience in countries with beef grading systems or restrictions on the slaughter age of cattle for domestic consumption where beef consumption has remained relatively static despite the increase in annual per capita chicken consumption.

In the United States the total meat consumption (beef, lamb, pork and chicken) has increased from 150.7 pounds per person per year 1960 to 201.7 pounds per person per year in 2004 with per capita beef consumption remaining static and per capita chicken consumption rising by 18% during that period.

The Supply Side and Expenditure Argument

MLA has argued that the decline in domestic consumption does not reflect domestic demand, but is instead a function of the limited domestic availability of beef. MLA argue that as production is limited, and better prices can be obtained in export markets, production is exported first and the residual production (ie. that portion of total production that has not been exported) constitutes the domestic usage.

It is also noted that historically, increases in consumption have not always reflected the health of the industry. This was most apparent during the beef industry crisis in the 1970s when consumption reached 70 kg per person.

The MLA conclusion appears to be that domestic expenditure on beef is the better indicator of domestic demand for beef, and that falling per capita consumption is a result of supply constraints and not necessarily weakening demand.

The argument is correct in so far as it concerns the definition or measurement of (apparent) domestic consumption or utilisation, this being calculated as the difference between total production and total exports, plus imports. However it is incorrect in so far as it fails to identify domestic demand as a factor influencing the volume of beef sold onto the domestic market.

The decline in domestic usage is best seen as a result of a combination of factors, including stronger relative demand in export markets, the low Australian dollar, retail market concentration and widening retail-wholesale and retail-farm price spreads (see eg ACCC 2007). Production is shifted toward the highest value markets, which in the last ten years has been Asian export markets including Japan and Korea. These markets have driven prices internationally and domestically.

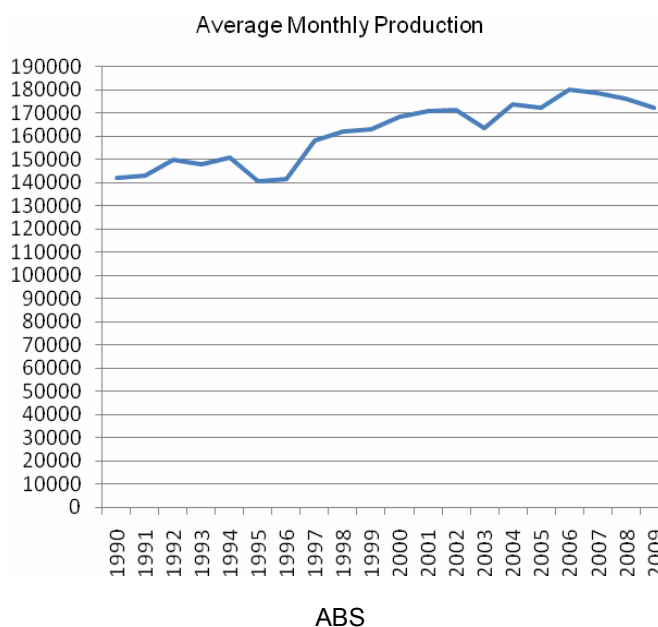
However it is fatalistic to argue that domestic demand growth will not affect prices on the domestic market and therefore the volume of beef sold into that market. Such fatalism is inconsistent with MLA's domestic marketing role and recent \$5 million domestic marketing expenditure. It is also inconsistent with a substantial body of research on consumer willingness to pay (WTP) for beef eating quality, which shows that increased retail prices are associated with increments in eating quality (Polkinghorne 2008; Thompson 2010; Polkinghorne 2010).

Nevertheless, an expenditure test (as favored by MLA) shows that underlying domestic demand for beef has not significantly increased since the early 1990s. Australia's population increased by 25% between 1990 and 2008, whereas domestic usage has increased by only 9% from 1991-2 (649 kt) to 2008-09 (708 kt). If underlying demand had remained stable, a significant rise in real retail prices over the last 20 years would have been expected. In fact, real retail prices have risen just 2.8% since 1990 (1990-2008; note that in the intervening period real retail prices fell but recovered after 2000).



ABARE (2008); ABS Inflation Calculator

Although the Australian beef cattle herd grew by 12.8% from 1990 to 2008, an increase in average carcass weights (16%) has resulted in Australian beef production growing by over 25% in this period. However, domestic usage has declined as a proportion of overall production from 39.6% in 1997 to 34.7% in 2008 (Source ABARE).



The industry is predicted to become increasingly reliant on the domestic market with the strength of the Australian dollar.

The decline in domestic usage is best seen as a result of stronger relative demand in export markets, rather than terms of supply or capacity constraints. Production will be shifted toward the highest value markets, which in the last ten years has been Asian export markets including Japan and Korea. These markets have driven prices internationally and domestically.

The domestic market has been less valuable due to:

- the low Australian dollar;
- retail market concentration and widening retail-wholesale and retail-farm price spreads (see eg ACCC 2007);
- weak domestic demand for beef.

Although limited growth is expected in the next few years (MLA 2008), Australian cattle herd growth is expected to come up against capacity constraints in the longer term. Over 60% of Australia's land mass is currently used for livestock production (RMAC 2010) and that percentage is likely to decline in the longer term due to encroachment on pastoral land from urban expansion and increased grain production (Cribb 2010).

The Intergenerational Report produced by the Federal Treasury on 2010 forecasts Australia's population will increase to 36 million by 2050, which means that domestic demand should increase provided the market is properly exploited. If current consumption and production rates remain stable, the forecasted population increase will drive domestic consumption to 1.213 million tonnes per annum or 57.7% of total production.

The supply side theorists argues that domestic consumption is a function of domestic availability, which is determined by the quantity of total production less the amount that is exported at premium prices.

The supply side theory suggests that domestic availability is determined by export markets. Hence changes in domestic demand are more accurately reflected in expenditure and not consumption, given that it is the strength of the export markets which determines domestic availability and consumption.

Supply side arguments emphasize the role of higher value export markets in determining the quantity of production made available for the domestic market. The decline in consumption is said to have resulted from decreased availability as a result of the greater percentage of product that is being exported (ie. 2008 beef exports were 65.3% and domestic consumption 34.7% of total consumption) (Source ABAN).

This approach sees domestic consumption as a function of supply and consumption is therefore said to be a poor indicator of demand production.

The supply side theorists ignore the fact that Australians trade in a global economy with products being sold to the highest bidder.

A leading Australian beef export broker advises that a few years ago, when the value of the Australian dollar was lower, the Japanese market was the key driver for the price of high quality Australian beef prime cuts but now, with the high Australian dollar, the Australian market is the key driver of quality prime cuts with large exporters such as Swifts and Teys Bros diverting product historically sold to the Japanese market back onto the Australian market.

Australian beef retails at approximately 30% more than the American retail prices even though the overall quality of the American graded product is higher than the majority ungraded product consumed in Australia.

Leading Australian export brokers confirm the findings of the GHD Hassall Report that the prime cuts from old cows command higher prices in Australia than overseas and advise that the wholesale price of mince in Australia is higher than the wholesale price that can be obtained in overseas markets.

The US, which is one of Australia's competitors on the global market, consume almost 90% of the beef that they produce at lower retail prices than Australia. The Irish who export their production primarily to the European market have not suffered the same per capita consumption decline as it has occurred in Australia in the last two decades. Indeed Irish per capita beef consumption has remained static since the mid 1990s.

The supply side theory sits at odds with the remarkable increase in price of Australian lamb in recent years with lamb per capita consumption being maintained at historical levels in contrast to the continuing decline in Australian per capita beef consumption.

Conclusions

Market Forces

The argument that issues about the inconsistent eating quality of beef can be resolved by market forces and that consumers can simply vote with their feet ignores the opportunities that consumers have to purchase competing products such as chicken and pork that have a higher degree of eating quality consistency and is demonstrably wrong. Per capita beef consumption has been falling in countries such as Australia who do not have a consumer orientated beef grading system for the majority of its beef product but has been maintained in countries that have slaughter age provisions for table beef or comprehensive majority product consumer orientated grading systems.

Total Finite Meat Consumption Capacity

The finite total meat "pie" argument that the opportunity to increase per capita beef consumption is limited by the finite capacity for Australians to consume meat products (beef, lamb, pork and chicken) does not accord with the published meat consumption figures in Australia or overseas which disclose that annual per capita meat consumption fluctuates from year to year and has been increasing over time.

Supply Side and Expenditure Arguments

The argument that domestic consumption is limited by domestic availability of beef that Australians only consume beef that cannot be sold onto the export market is also demonstrably wrong. As are the claims that normal consumer expenditure is a better indicator of domestic demand for beef than per capita consumption.

Wholesale beef is sold to the highest bidder. In the early part of this century when the Australian dollar was lower the Japanese market drove the price setting for high quality cuts of beef whilst higher percentage and the percentage of Australia's beef production was exported rose to 67%. In the last year or two with Australian dollar approaching parity with the US dollar the Australian domestic market has displaced and is now driving the price and quality of cuts and much of the beef export advertised such as Swifts, Tuys and Nippon shifting more of their production back onto the Australian market.

Further, and perhaps even more conclusively, an examination of Australian domestic expenditure on beef in real terms shows little growth since the 1990s (9%) despite the 25% increase in population during this period.

The MLA supply side theory also sits at odds with the remarkable increase in price of Australian lamb in recent years with lamb per capita consumption being maintained at historical levels in contrast to the continuing decline in Australian per capita beef consumption.

RECOMMENDATIONS OF THE BINDAREE PIP

Cow Beef

Australia is one of the few countries in the developed world where consumers are sold large quantities of prime cuts from old cows at the end of their breeding cycle. The comparative International research into the correlation between slaughter age, beef grading systems and beef consumption carried out in the Bindaree Beef PIP discloses that there is a strong correlation between slaughter age and beef consumption. Beef consumption has remained stable or increased over the last twenty years in countries where few or none of the prime cuts sold come from animals over thirty months of age whilst in countries like Australia and Germany where significant amounts of prime cuts cast for age cows are sold to consumers, per capita beef consumption has declined.

The terminology used to label a particular grade or type of beef can have a significant effect on the percentage of that grade or type of beef that is consumed compared to other grades or types. For instance, as discussed earlier in this report, when the name of the "Good" USDA grade was changed to "Select" in the 1980's, the percentage of that grade consumed in the United States rose from 2.7% in 1986 under the label "Good" to 32.7% in 1996 under the label "Select".

The current anomaly within the AUS-Meat language whereby beef from an animal which has not reached maturity (6 tooth) is labelled "Mature" and beef from much older cast for age cows (8 tooth) is labelled "Economy" must be addressed.

The practice of labelling old cow beef cuts in a manner that misleads consumers as to the age of the animal and the eating quality of the beef has been criticised by consumer groups, media commentators and Parliament. The 2009 Senate Committee report described the practice of labelling old cow beef as "Budget" as "at best confusing and at worst misleading" to consumers.

The consumer research shows that the term "Economy" is more misleading than "Budget" and that most consumers think that beef labelled "Economy" would represent value and be better to eat than beef labelled "Budget". On the other hand, consumers think that beef labelled "Mature" probably came from an old cow and would be of lower quality.

Whilst the NSW *Food Amendment (Beef Labelling) Act 2009* provides valuable and important truth in labelling reforms, the last minute replacement of the misleading and confusing Budget label to describe old cow beef with the even more misleading and confusing term "Economy", undermines one of the key truth in labelling purposes of the Act with respect to beef from old cows.

Recommendation 1:

The AUS-Meat Retail Beef Register labelling specifications for "Mature" and "Economy" should be switched so that "Mature" applies to mature 8 tooth product (other than "Manufacturing" beef) and the term "Economy" applies to immature 6 tooth product.

Beef Grading

Consumer research (MLA 1988) has shown that consumers are dissatisfied with beef as a product because of its uncertain and unpredictable eating quality which has led to a fall in per capita beef consumption. The dissemination of international trends in beef consumption discloses the per capita beef consumption has been falling in countries like Australia that do not have consumer orientated beef grading systems for the majority of its beef product but has been maintained in countries that have slaughter age provisions for table beef or comprehensive majority product consumer orientated grading systems.

The GHD Hassall benefit cost analysis forecasts a potential \$1.2 billion benefit for the Australian beef industry from increased domestic prices and consumption resulting from the implementation of a

national all of product grading system. A national grading system may also assist exporters to market and supply more consistent eating quality product overseas.

An all of product grading system, expressed in simple and consumer friendly terms, is needed to provide consumers with the information necessary to purchase the quality of beef they require before making their decision to buy and to ensure a consistent eating experience. This would bring Australia into line with many of our export markets which have well established beef grading and quality standard systems and where, on average, quality and consistency is higher than in Australia.

Not all carcasses satisfy the technical requirements for MSA cuts-based grading. Consequently the vast majority of beef sold to Australia consumers is ungraded. A carcass-based grading system is needed to allow product that is not or cannot be MSA graded to be brought under the all of product grading system so that all of Australian consumers can enjoy a consistent beef eating quality experience which research shows is a prerequisite for the necessary consumer confidence for demand growth.

Carcass-based grading is widely utilised for beef grading in overseas markets including the US, Canada, Japan and Korea.

The 1998 Brisbane MSA Carcass Grading pilot study shows consumer satisfaction levels equivalent to the USDA grades can be achieved for the top grilling cuts of the carcass through an MSA Carcass Grading system.

Recommendation 2:

A national all of product grading system should be introduced employing simple, consumer oriented grading language (eg., "5 Star", "4 Star", "3 Star", etc., or "Platinum", "Gold", "Silver", etc.)

Recommendation 2.1

The highest grades of this grading system could be reserved for MSA four and five star product.

Recommendation 2.2

Carcass grading specifications similar to those utilised in the 1998 MSA Carcass Grading Trial, which are simpler, cheaper and can be used on a wider scale, should be developed to grade the ungraded 0 to 6 tooth product which cannot be or is not MSA graded.

Consumer Education

50% of ungraded beef will not satisfy minimum eating quality standards required by consumers regardless of how it is cooked. In this context expenditure on domestic beef promotion is unlikely to achieve long term benefits for the beef industry.

Conversely, in the context of a system ensuring quality and consistency to the consumer, marketing expenditure would be effective to address the change in Australian consumer attitudes which has led to the continuous decline in domestic beef consumption over the last 20 years.

An informative marketing campaign is needed to promote awareness of the proposed national beef grading system, the New South Wales Truth in Labelling legislation and MSA (which is largely unknown to, or misunderstood by consumers) and to educate consumers on the factors that contribute to eating quality.

Recommendation 3

A domestic marketing campaign should be launched to educate consumers on the meaning of the proposed national beef grading terms and truth in labelling provisions to improve consumer understanding of and attitudes toward beef.

ABARE 2008, *Australian Commodity Statistics 2008, Rural Commodities, Meat - General*.

ABARE 2009, *Australian Commodity Statistics 2009*.

ABARE 2009a, *The Value of the Red Meat industry to Australia*, ABARE research report June 2009.

AC Nielsen 2000, *Preliminary Comments on Cow Beef Survey*, prepared for Hunt Partners Solicitors, 28 August 2000.

ACCC 2007, *Examination of the prices paid to farmers for livestock and the prices paid by Australian consumers for red meat, A report to the Minister for Agriculture, Fisheries and Forestry*, February 2007.

Beck, M, Kewell, B, & Asenova, D 2007, *BSE crisis and food safety regulation: A comparison of the UK and Germany*, Working paper no 38, White Rose Research Online.

BSE Inquiry. *The Inquiry in to BSE and variant CJD in the United Kingdom*. A Report in 16 volumes. Crown Copyright, London 2000. (<http://www.bseinquiry.gov.uk/>)

Cribb 2010, *The Coming Famine: risks and solutions for global food security* (Discussion Paper).

DEFRA 2002, *Household Expenditure and Food Survey 2001-2*.

Delta MV Knowledge Solutions (2010), *Beef Retail Classification Research*, prepared for MLA ,12 May 2010.

Eurostat 2010, *DS-068724-Gross human apparent consumption of main food items*.

Fisher, S, 2007 *Food and meat price inflation in the UK*.

GHD Hassall 2010, *Benefit Cost Analysis of a Proposed Beef Grading and Labelling Scheme Interim Report*, prepared for Hunt Partners Solicitors, March 2010.

Haley, Mildred M 2001, "Changing Consumer Demand for Meat: The U.S Example, 1970 – 2000" in Regmi, A. (ed), *Changing Structure of Global Food Consumption and Trade* Economic Research Service/USDA, WRS No. (WRS01-1) 111 pp, May 2001.

Davis, Christopher G, Lin, Biing-Hwan, "Factors Affecting U.S. Beef Consumption", USDA Economic Research Service, Outlook Report No. (LDPM13502) 25 pp, October 2005.

Lloyd, T, McCorrison, S, Morgan, W and Rayner, T 2004, *Food Scares, Market Power and Relative Price Adjustment in the UK*, Discussion Paper No. 04/10, May 2004.

Meat Industry Council (MIC) (1996), *Meat Industry Strategic Plan*.

MLA 1998, *Meat Standards Australia Business Plan December 1998*.

MLA 2000, *Consumer Perceptions of Cow Beef Final Results - Qualitative and Quantitative - Presentation by Millward Brown Australia (July 2000)*.

MLA 2006, *Australian Beef Industry, Financial Performance to 2005-06*, October 2006.

MLA 2008, *Australian Cattle Industry Projections*.

Nelson, Kenneth E 1977, "Economic Effects of the 1976 Beef Grade Changes." ERS/USDA, Technical Bulletin No. 1570, June 1977, Washington, D.C.

Newspoll 2010, *MSA Study - Final Tables*, prepared for Hunt Partners Solicitors, February 2010.

Nine MSN (2009), *NSW gets new beef labelling laws* (1 December 2009) at <http://news.ninemsn.com.au/article.aspx?id=978327>.

Norkus, Gregory X 1988, Goodbye, Good-Hello, Select, *Cornell Hotel and Restaurant Administration Quarterly*; Aug 1988; 29, 2; ABI/INFORM Global pg. 14

Polkinghorne, R., Philpott, J., Gee, A., Doljanin, A., & Innes, J. 2008, "Development of a commercial system to apply the Meat Standards Australia grading model to optimise the return on eating quality in a beef supply chain" *Australian Journal of Experimental Agriculture*, Vol. 48, 1451–1458.

Polkinghorne, R.J., Thompson J.M., 2010 "Meat Standards and Grading: A World View", *Meat Science* 86 (2010) 227-235.

RMAC 2010, *Meat Industry Strategic Plan 2010 (MISP3)*.

Singer, M (2010) "It's just old cow meat by another name", *Sydney Morning Herald*, 31 July 2010 at <http://www.smh.com.au/nsw/its-just-old-cow-meat-by-another-name-20100730-10zsh.html>

Thompson, J., Polkinghorne, R., Gee, A., Motiang, D., Strydom, P., Mashau, M., et al. 2010, "Beef palatability and niche marketing strategies in the Republic of South Africa" *ACIAR Technical Reports* No. 72. Australian Centre for International Agricultural Research, Canberra.