REPORT

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An evaluation of MLA's red meat nutrition program

Prepared for Meat & Livestock Australia

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Glossary

AI	Awareness Index
BSE	bovine spongiform encephalopathy
CATI	computer aided telephone interviews
baseline	A hypothesis or judgement about the (likely) outcome that would have occurred without the impact of a program or action
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DoHA	Department of Health and Ageing
GATT	General Agreement on Tariffs and Trade
GP	general practitioner
kg cwe	kilograms carcass weight equivalent
KPI	key performance indicator
MLA	Meat & Livestock Australia
NGO	non-government organisation
OLS	ordinary least squares
POS	point of sale
PR	public relations
R&D	research and development
TLE	The Leading Edge (marketing company)
TVC	television commercial
TWD	Total Wellbeing Diet

Highlights

Since 1998, Meat & Livestock Australia (MLA) has invested in and delivered a red meat nutrition program with the objective of reducing barriers to the consumption of red meat.

- Prior to the program's launch, red meat consumption had been on a steady, long term decline in Australia which was consistent with other mature red meat markets around the world.
- The relative contribution of a range of key drivers to this decline, including changing consumer preferences and perceptions, is not well understood.

A contributing factor to this decline was thought to be negative messages and perceptions regarding red meat's nutritional value. The nutrition program sought to overcome this barrier to consumption through a marketing campaign that drives attitudinal change, which in turn contributes to shifting household consumption behaviour (MLA 2003b).

To achieve this objective, the campaign takes a portfolio approach to manage these threats and potential risks and build on wide-acceptance of red meat by domestic consumers through:

- a nutrition research program to produce strong, evidence-based messages about the nutritional benefits of red meat consumption;
- promotion targeted at the health professional industry — namely, general practitioners (GPs) and dietitians;
- consumer promotion providing information on red meat's nutritional value and promoting positive images of red meat; and
- an ongoing issues management program.

This evaluation analyses the impacts of MLA's nutrition program. The objective is to determine the program benefits in the form of:

- consumer demand for red meat at levels above those that may persisted without an integrated approach by MLA and industry; and
- public health benefits due to increased consumption of red meat.

This evaluation focuses on program key performance indicators (KPIs) and other relevant measures drawn from consumer tracking data.

- The available evidence reflects a number of data sets with variations in methodology and scope.

- The analysis is limited to the period 2004 to 2008 — this being the only period for which there is a consistent, continuous set of tracking data. As such, it does not include the first two years of the initial Red Meat Feel Good (RMFG) campaign.

Key findings

The following summarises the key findings for the two groups targeted by the program: health professionals and households.

Health professionals

MLA surveys shows that GPs and dieticians were more receptive to messages about the health-related benefits of red meat

- **The proportion of health professionals (both GPs and dietitians) who recommend that red meat should be served three to four times per week has increased markedly.**
- GPs have maintained or increased their high levels of agreement with red meat nutritional statements since 2002. Similarly, the proportion of GPs recommending red meat three to four times a week for patients with high cholesterol and obesity has increased significantly.
- **Since 2001, the share of dieticians agreeing that red meat is an essential part of a health diet increased by over 15 percentage points, to an overall level of around 85 per cent.**
- Improvements were also seen with regard to a number of other statements, including lean red meat being advised to cholesterol patients and being part of obesity management.
- But there was insufficient data to make an assessment of the relative contribution of MLA's campaign compared to other sources of health-related opinion and information available at the same time.

Households

Red meat is a mature consumer product that continues to enjoy a high level of familiarity and acceptance by Australian households.

- **Over 80 per cent of Australian households have a positive attitude to red meat. This share of households has not declined since 1999, in a statistically significant way, from already high levels.**
  - Between 2004 to 2008 over 50 per cent of consumers were able to correctly identify the key campaign message of three to four red meat meals per week. Around 70 per cent of consumers agree that beef is an essential part of a health diet. A similar percentage shares the view that red meat makes healthy meals.

- From 2004 to 2008, based on the average number of serves per week, there has been no unfavourable shift away from red meat in terms of **the share of consumers who are resistors, while those who are either 'appreciators' or 'acceptors' may be increasing.**

Self-reported behaviour

Another important program indicator was the proportion of mothers limiting consumption of red meat for their families.

- The share of mothers limiting consumption fell from 60 per cent in 2001 to just over 20 per cent in 2004. From 2004 and 2007 this trend reverses, possibly due to the change in data source, but does not return to initial levels seen in 2001.
- **This suggests that despite positive attitudes, households constraining consumption due to health concerns remains an important consideration for the campaign**.

Self-reported household consumption

An important program KPI is how the number of red meat serves has changed over time. It is one of the closest measures of the effectiveness of a marketing campaign translating through to higher sales.

- From 1998 to 2001, household serves of red meat increased. After this, though, the number of serves was maintained over the period 2002 to 2006. Individuals report, on average, having three serves of red meat per week. This average also has been maintained over the past four years.
- On average, acceptors and appreciators consume the recommended three to four serves per week. And so their **average level of consumption has been, at minimum, maintained over the past four years**.

Increase in demand for red meat

The other important element of consumer demand is during the campaign prevailing prices increased strongly largely the result of developments in key export markets.

- Between 2004 and 2008, consumers have been willing to absorb higher price to maintain their current number of serves. Given this, consumer demand for red meat has undoubtedly increased.
- Current performance can be compared to declining per person consumption which was observed during the 1990's and which characterises mature red meat markets around the world.

However, it is very difficult to establish objectively *how much* of this total increase can be attributed back to this MLA program given the current information set.

- Observed Australian consumption, needs to be compared to a baseline or set of market outcomes where MLA and industry would not have responded to the threat of falling consumption. Establishing the 'without' baseline is very difficult.
- The next step would be then to attribute the total outcome between the contribution of the MLA nutrition program, other MLA programs and other actions by industry to sustain consumer demand.
- But without sufficient data to directly link the observed change in attitudes and behaviour back to the increase in demand and industry sales, it is not possible to establish what proportion of this increase can be attributed back to the Nutrition program.

Role of promotion and other studies

This evaluation identified that promotion plays a range of important functions in agricultural and food processing industries. These roles can be mapped directly back to the approach taken to the components of the nutrition campaign that are mainly defensive in nature:

- maintaining red meat's image to maintain consumer's awareness and to build the value of the 'brand'; and
- by providing credible information to manage the ongoing threats of adverse changes in consumer preferences or perceptions.

Also like other related industries, these activities are conducted using a collaborative approach along the marketing chain that uses advertising based on individual brands, images and innovative products.

By their nature, the benefits of these defensive activities are very difficult to quantify. The literature review showed that similar studies demonstrated positive but modest payoffs to generic promotion with benefit-cost ratios between 2:1 and 6:1. Most studies involve quantifying the correlation between promotion expenditures and consumption. These studies:

- took a wider perspective of promotional activities than this evaluation; but
- faced similar constraints to those identified in this study: a lack of consistent time-series data and difficulty in establishing direct links between program indicators (outcomes) and increased sales (the impact of the program).

Evaluating public health benefits

The program's logic identifies a range of positive outcomes and impact beyond changes in consumption. Improved public health represents an important spillover benefit that would flow outside of the red meat industry.

- MLA health research considered the interaction between consumption of red meat and the risk of a number of health effects. Some of the health effects are quite serious, such as bowel cancer, heart disease and obesity.
- Reducing the risk or prevalence of these effects (mortality as well as significant morbidity) can generate substantial benefits. These benefits arise from a range of sources including avoided treatment costs, improved quality of life, minimisation of adverse impacts on carers and family and avoided work loss days.

While mapping the link between nutritional awareness and public health benefit is relatively straightforward, measuring the linkages and impact is not. This report sets out a framework for quantifying the impact of this important spillover benefits.

Break-even analysis

Given the constraints in identifying the baseline or the 'without' outcomes and then contribution of the impact of the Nutrition program to this overall outcome, a break-even approach is used to evaluate the effectiveness of the program.

- That is, what increase in demand for beef and lamb above baseline and what would be the contribution of the nutrition program to that increase would be required for the program to pay for itself?
- The required payoff, calculated using the MLA's integrated framework (IF), is the increase in farm value-added or income of beef and lamb producers and is equivalent to the point at which marketing levies that fund the program are raised.
  - To be *conservative*, the timeframe for the breakeven analysis is confined to the 5 years of the program. This assumption means that the benefits do not persist after the program period ends.
  - This assumption is made because of the uncertainty on the rate of decay of program components – or how long benefits would last without continued funding.

The results of the breakeven analysis are summarised in table 1.

- The IF indicates that over the period 2002-07, a sustained increase in domestic demand for red meat would have be 1.5 per cent above baseline to deliver sufficient income back to levy payers to fund program costs.
  - This is equivalent to an additional $128 million in sales at retail each year.
  - If the flow of benefits required to fund the program are confined to beef only, the increase in demand needs to be 3.2 per cent above baseline.
  - If program benefits are assumed to persist for another 3 more years – then the required increase for beef and lamb falls marginally from 1.5 to 1.4 per cent (see table 1).

1 **Results of breakeven analysis using the Integrated Framework**

Increase in demand required	*Change in consumer demand required*	*Share of increase in demand*[a]	*Increase in retail sales*[b]
	%	%	$m
Beef and lamb			
▪ Over six years	1.5	13.4	128
Sensitivity analysis			
Beef only			
▪ Over six years	3.2	40.7	211
Beef and lamb			
▪ Over nine years	1.4	12.4	119

[a] Increase in demand as reported by the MLA demand index. [b] Increase required in annual value of retail sales as reported by the MLA.

Note: The analysis discounts program costs and benefits to 2006-07 using a 5 per cent discount rate.

Source: Integrated Framework and CIE calculations.

- From the beginning of 2001-02 through to 2006-07, demand for red meat increased by around 11 per cent over baseline according to MLA's demand index - the result of the concerted actions all MLA programs and industry initiatives.
- The breakeven analysis suggests that the nutrition campaign would have had to contribute less than 15 per cent of this total contribution to pay for itself.
  - Because of the conservative nature of the assumptions behind the analysis, this requirement presents an *upper-bound* on the required increase in demand that is attributable back to the program.

1 Purpose of this evaluation

A key objective of MLA in partnership with industry is to sustain domestic demand for red meat — including beef, sheep and goat meat. On this front, MLA works with industry to ensure:

- strong demand for red meat
- strong attitudes towards red meat
- strong presence of red meat in the market.

These outcomes should ultimately translate into realised higher volumes of product purchased or prices paid for that product than would have occurred without collective (MLA) action.

MLA's approach centres around the five pillars for consumer demand — summarised in table 1.1. These pillars represent a portfolio or integrated approach to sustaining red meat demand in the domestic market.

1.1 Five pillars of consumer demand

Pillar	*Outputs or outcomes*
Enjoyment	▪ Ensure quality expectations are met and exceeded
	▪ Remind consumers of appeal and popularity of red meat
Convenience	▪ Remind educating consumers on the ease of preparing red meat cuts
	▪ Develop easy-to-prepare new products
	▪ Encourage consumers at grocery point of sale and food service to choose red meat
Nutrition	▪ Educate consumers on the essential role of red meat in the diet
	▪ Research the impact of red meat diets on health and wellbeing
Integrity	▪ Maintain consumer trust that red meat products are safe
	▪ Build confidence that industry practices are responsible and sustainable
Value	▪ Recognise that red meat needs to remain affordable, with a range of price options

Source: MLA (2008).

Scope of this evaluation

This evaluation adopts a narrow scope. It relates only to the nutrition pillar. That said, it is important to recognise that improvements in consumer demand for red meat will be a function of change in any or all of the pillars. Ascertaining the contribution of the nutrition campaign would be best understood through an analysis that considers changes in all five pillars.

To evaluate the nutrition campaign's impact, the analysis adopts a two-step process. First, it aims to explore and, where possible, establish direct linkages between the nutrition program and key performance indicators of the campaign. The evaluation then looks to translate these indicators into market outcomes in terms of higher demand levels than would have occurred in absence of the program.

2 *Falling consumption of red meat*

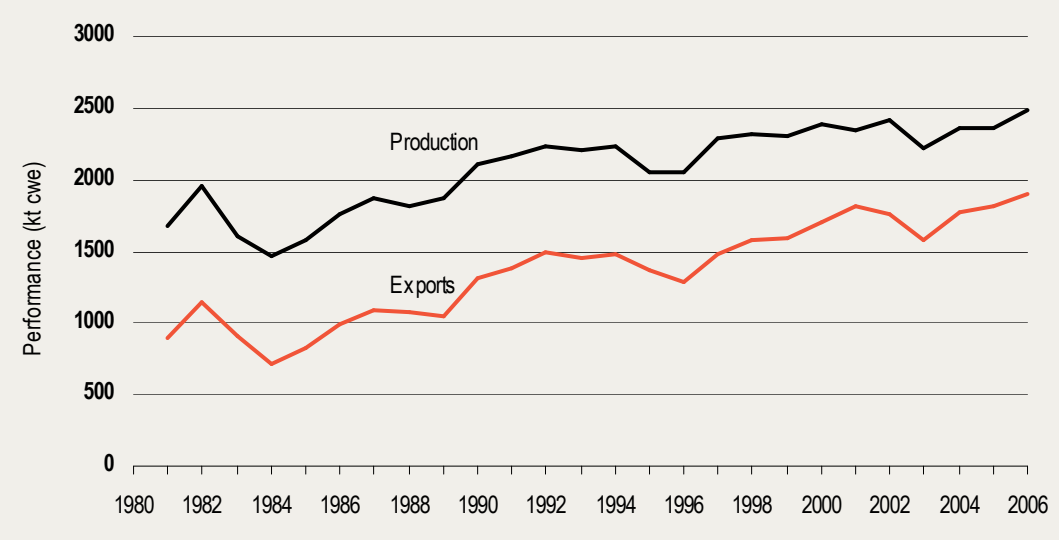
This chapter sets the context for understanding the motivation and role of MLA's nutrition campaign. It covers trends in the consumption of red meat and draws attention to some of the drivers of these trends.

Australia's red meat production

The past ten years have shown that the domestic market is strongly linked to international markets, especially through price. By 2006, over two-thirds of Australian red meat production was exported. Chart 2.1 shows that, over time, Australian production growth in red meat (mainly beef) has been matched by strong export performance — especially demand-pull from Japan and South Korea. Key drivers of this growth have been income growth in Asia and the trade liberalisation that occurred as a result of the Uruguay Round of GATT.

As a result of the dominance export markets play, the supply and price of red meat for meeting domestic demand is highly sensitive to overseas trends (for example, BSE outbreak/scare, exchange rates, etc). Given this dynamic, MLA's promotion strategies target reinforcing strong Australian consumer demand so that it can weather the challenges.

2.1 **Australia's red meat export performance**



Data source: GMI database.

Australian trends in consumption

In regards to consumption, Australia's trends over the last decade follow similar patterns to that of other comparable developed countries. As chart 2.2 illustrates, the consumption of red meat in Australia, the United States and Canada has been trending downwards. Consistent with this trend, red meat's Australian market share also fell by a disproportionate amount. In the four years prior to 2002, red meat's market share fell from 64 per cent to just 56 per cent.

A common theme of meat demand in these countries is the emergence of poultry meat in consumer diets. This has been driven by significant productivity growth in the poultry sector, resulting in decreases in price relative to red meat, together with positive health perceptions, product development, improved quality and strong promotion. At the same time, red meat received a significant amount of negative attention in the late 1990s, leaving some consumers with the view that they could improve their diets by limiting red meat consumption.

Examination of chart 2.2 also highlights that that, historically, Australia's consumption was out of alignment with consumers in North America — per person consumption of red meat in Australia was considerably higher than other developed countries. However, Australian consumption levels have been converging on those observed in the United States and Canada.

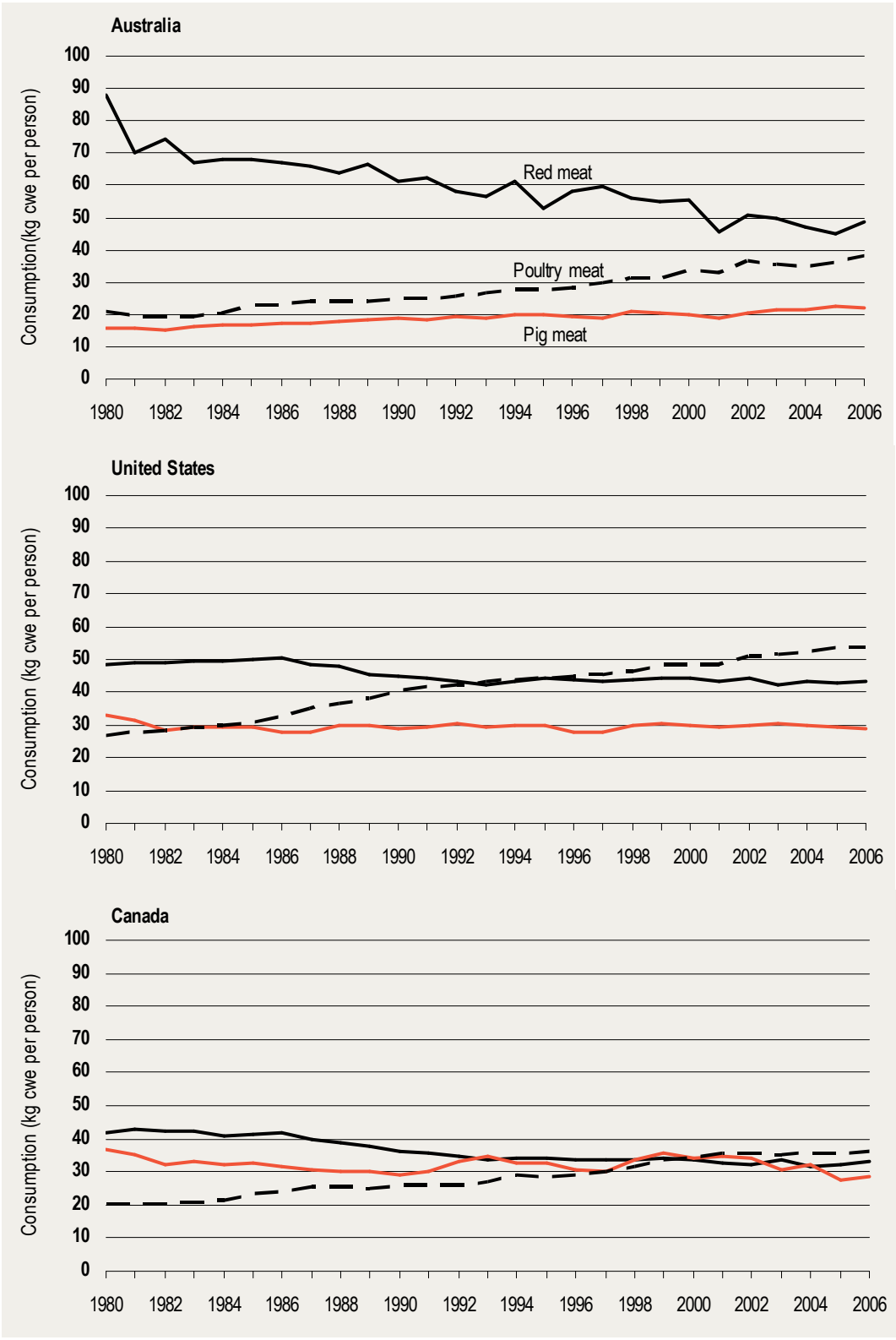
Over a 20 year period (from 1980), per person consumption fell by nearly 25 per cent. By 2006, Australian per person consumption was 48 kg cwe — which is still high compared to 43 and 33 kg cwe for the United States and Canada (see chart 2.3).

Australian perceptions of red meat

While Australia did not experience any incidents of 'mad cow disease' or the full extent of fad diets, households were exposed to range of negative messages about health problems associated with excessive consumption of red meat.

In 1999, MLA consumer tracking surveys found that only 16 per cent of people thought red meat was essential to a healthy diet. A survey by the Australian Dairy Corporation reported that nearly two thirds of women in 2000 felt that 'they should limit their red meat consumption to avoid possible health problems' (MLA 2002). To some consumers, red meat was regarded as 'public enemy number 2 — [where] if cigarette smoking didn't kill you, eating too much red meat would' (MLA 2005). Moreover, the proportion of consumers with negative perceptions of red meat had risen to 56 per cent in 1999, up from 43 per cent in 1997.

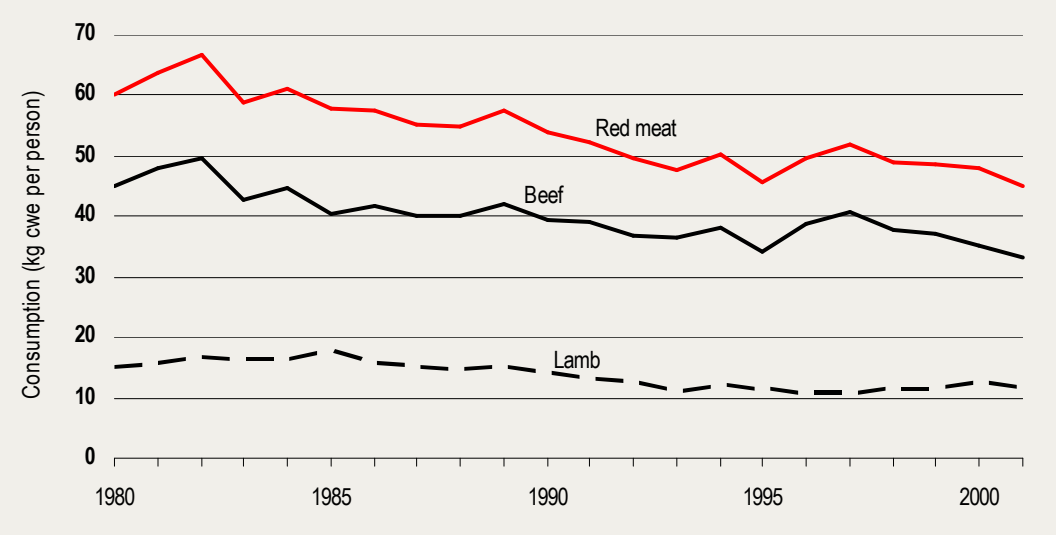
2.2 Per person consumption in Australia, United States and Canada



[a] Consumption measured by domestic disappearance.

Data source: GMI database.

2.3 Per person red meat consumption before the nutrition program[a]



[a] Consumption measured by domestic disappearance in Australia.

Data source: MLA.

Similar to consumers, GPs and other health professionals were also sceptical about the health benefits of red meat. Immediately prior to the launch of the campaign, as many as 40 per cent of GPs were recommending that their patients consume red meat less than one to two times per week, substantially less than the Australian Government guidelines recommend (chart 2.4).[1]

2.4 GPs recommending that healthy adults eat red meat less than or equal to one to two times per week

Data source: MLA (2003).

1 Australian Government guidelines clearly state that red meat should be consumed three to four times per week: 'The *Australian Guide to Healthy Eating* recommends that red meat be eaten three to four times a week; less than this and high-iron replacement foods will be required. This guide adds that this is especially important for girls, women, vegetarians and athletes'. (DoHA 2003)

3 The nutrition campaign

The declining demand for red meat was a key motivator for MLA's nutrition campaign. In November 1999, MLA convened the Red Meat and Health Expert Advisory Committee. The committee was charged with the task of preparing Australia's first evidence based red meat nutrition report. Their report, *The Role of Red Meat in Healthy Australian Diets*, launched in February 2001, had four main conclusions:

- lean red meat has an important place in a healthy diet;
- red meat is an important source of protein and other nutrients, such as iron, zinc and vitamin B12;
- lean red meat can be included in strategies for the prevention and treatment of obesity; and
- guidelines recommend we eat lean red meat three to four times per week.

On the back of this report, MLA launched a multi-million dollar nutrition campaign aimed at improving the nutritional image of red meat.

Objectives

The campaign's main objective was to 'reduce barriers to the consumption of red meat' (MLA 2003b). Marketing research commissioned by MLA confirmed that red meat has a negative health image, and this negative health image was a major constraint on consumption. This evidence-based nutrition campaign sought to reverse this image and to overcome 'decades of adverse news reports and negative communication proclaiming that a healthy diet meant reducing or eliminating red meat' (MLA 2007a).

The campaign consisted of four components:

- a nutrition research program to justify the role of red meat in healthy eating patterns and in lifestyle-related diseases, and to address concerns about red meat's nutritional integrity and its safety with respect to key public health issues;
- a communications campaign to promote the MLA's sponsored nutrition research among those in the health professional industry;
- a consumer campaign that would:
  - overcome misconceptions about the nutritional value of red meat

  - promote the image of red meat; and
- an ongoing issues management program to manage the media cycle and form relationships with government and non-government organisations.

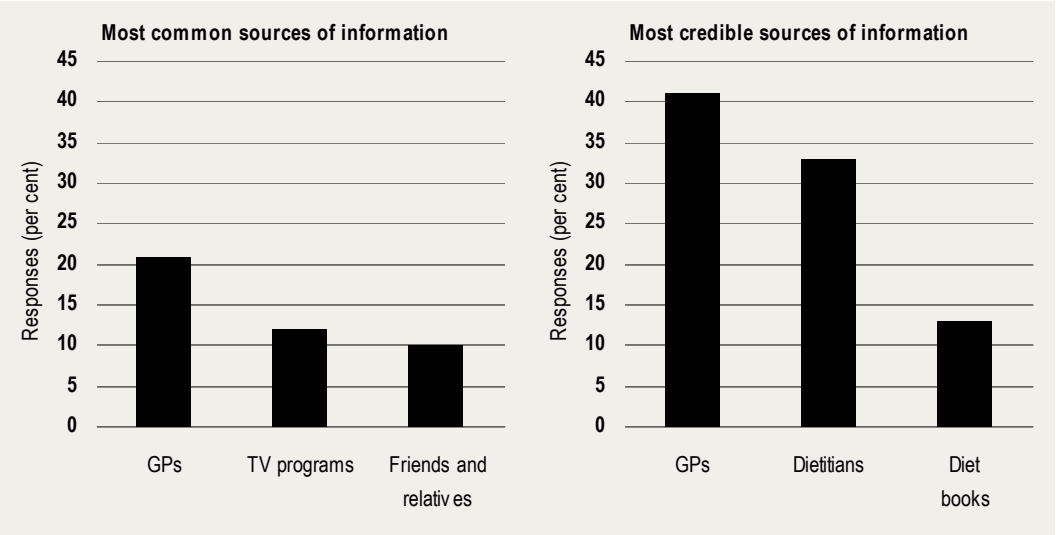
At the same time as promoting the nutritional value of read meat, MLA looked to support their message by promoting the association of red meat with 'vitality and wellbeing' and 'enjoyment'. This aspect of the campaign intended to appeal to emotive sentiments and emphasised positive imagery of red meat.

Logic of the program

Prior to the launch of the campaign, many consumers did not associate red meat as a healthy source of nutrition. This negative — and seemingly unsubstantiated — view imposed a barrier to the consumption of red meat by Australian households. MLA's nutrition campaign sought to overcome this barrier by 'driving attitudinal change as well as contribute to a shift in consumption behaviour' (MLA 2003b).

The two main sources for consumers to obtain information about nutrition are GPs and television. GPs (and dietitians) are also viewed as the most credible sources of dietary information (chart 3.1). The campaign sought to correct misconceptions about red meat by launching two targeted campaigns through these two avenues.

3.1 Sources of nutrition information

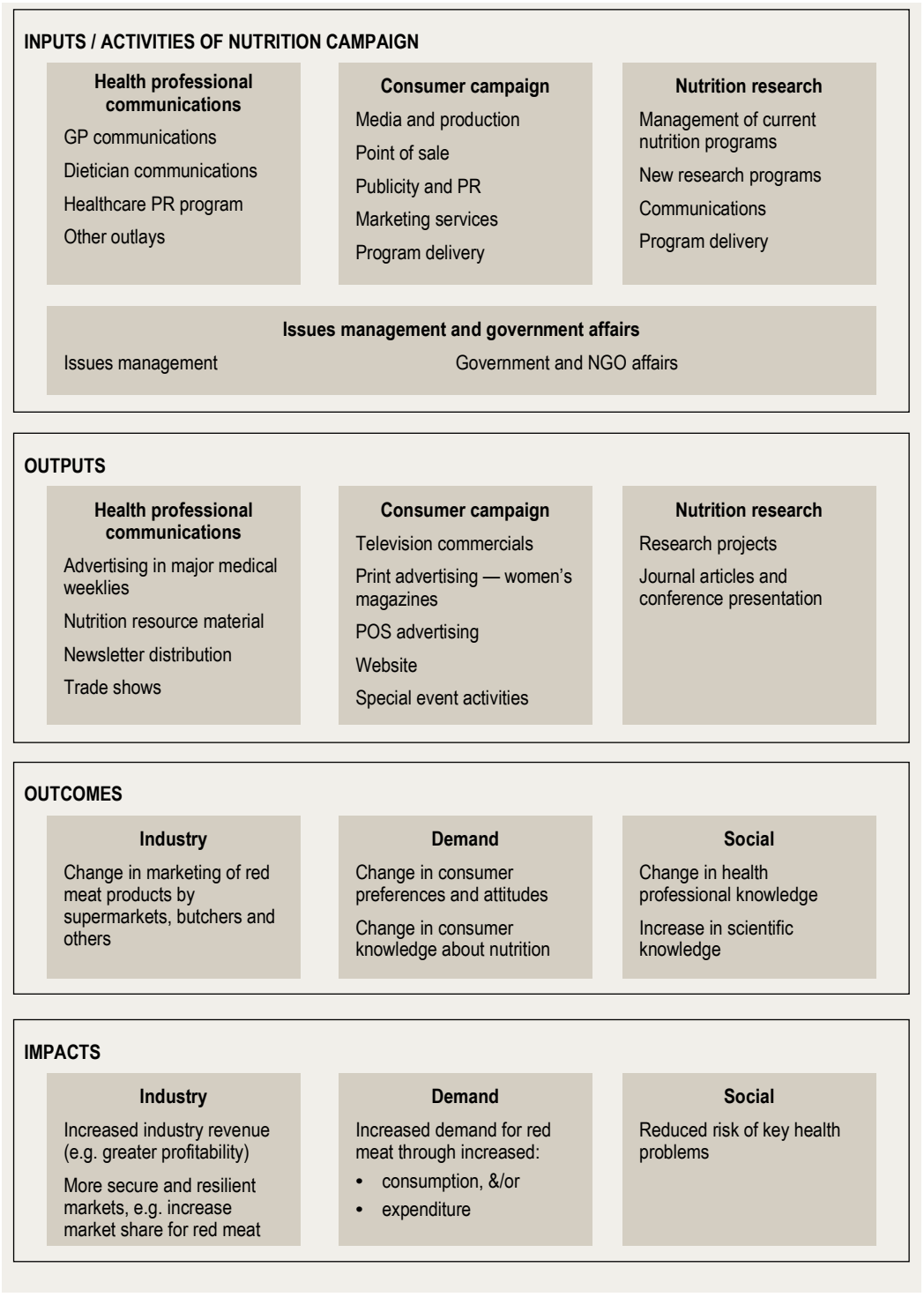


Data source: MLA (2003a).

It was hoped that the removal of these barriers would ultimately provide a sustained increase in demand. This objective was assisted with a marketing campaign that also promoted the enjoyment and nutritional message of red meat.

The program's logic is mapped out in chart 3.2. The campaign undertook a series of *activities* to produce a set of *outputs* (such as televisions advertisements, research

3.2 Mapping the campaign's logic

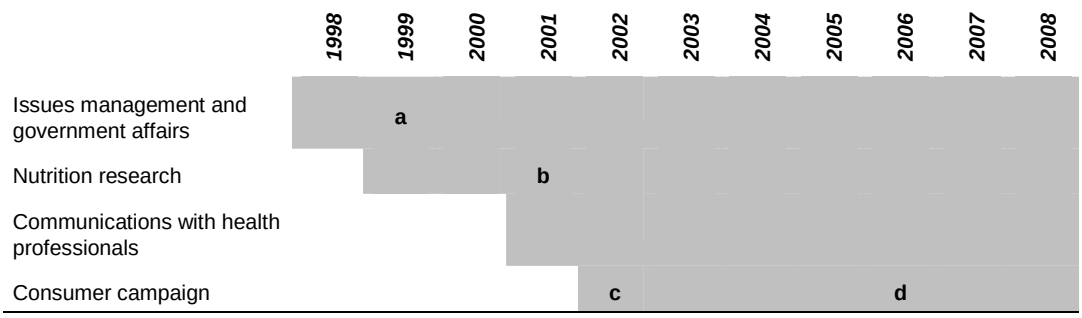


papers and advertorials). These outputs were designed to generate favourable changes in consumer preferences and market profitability (the program's *outcomes*). Finally, as a result of the change in preference, it was hoped that consumer demand for red meat would be reinforced and possibly increased (the program's *impact*).

Inputs and activities

The activities of the four main components of the campaign are listed below. These activities can be considered as the campaigns *inputs*. Table 3.3 maps out the timing of the campaign and its components.

3.3 Timeline of the nutrition program



a MLA forms Red Meat and Health Expert Advisory Committee.
b Committee releases report on *The Role of Red Meat in Healthy Australian Diets.*
c MLA launches the *Red Meat Feel Good* marketing campaign.
d MLA launches *Foundation Food* campaign.

Source: MLA.

Issues management and government affairs

MLA oversaw a program of issues management and media interaction to assist with the other components of the campaign. This component is effectively a risk management strategy. MLA forged working relationships between itself and state health organisations and non-government organisations. This branch of the nutrition campaign performed a number of activities including:

- monitoring and managing issues and media enquiries as they emerged;
- monitoring government and non-government organisations' nutrition and health policies, while maintaining positive relationships with key professional groups;
- implementing a healthcare public relations program to inform medical journalists about the latest science on red meat and health; and
- engaging in partnerships with the Dieticians Association of Australia and National Heart Foundation to provide evidence-based nutrition and health information on red meat.

Nutrition research program

MLA considered the provision of credible scientific evidence as an integral supplement to the campaigns targeting health professionals and consumers. Credible, sound evidence was required to justify the role of red meat in a healthy diet, promote increasing red meat consumption and counter arguments for reducing red meat consumption. Through the funding of research by key influencer research

organisations, MLA accumulated strong evidence to support its marketing activities as well as create supporting advocates in the nutrition research community (MLA 2005).

The aim of this program was to provide credible and sound nutrition evidence to help MLA understand:

- red meat's role in a healthy diet
- red meat's contribution to improving public health in Australia
- emerging areas of nutrition and behavioural science.

The research outcomes provide evidence-based information for communication and dissemination to nutrition researchers, public health policy makers, health care professionals and consumers.

External to the nutrition campaign, MLA partially funded the research behind the *CSIRO Total Wellbeing Diet* (box 3.4). The CSIRO Total Wellbeing Diet (TWD) is a nutritionally balanced, low fat diet — with a higher level of protein to improve satiety and key metabolic health biomarkers. Most of the protein is derived from lean meat, fish and low fat dairy foods. The diet also contains adequate fibre from wholegrains, fruit and vegetables (CSIRO 2008). The popularity of the CSIRO TWD, as well as the credibility of its authors, directly complemented MLA's efforts in promoting its nutritional message.

Health professional communications

To justify, promote and defend the role of red meat in the Australian diet, MLA went to consumers' main sources of information. GPs, dieticians and health organisations are major sources of credible nutrition advice to the community, and each has a role in influencing nutrition/health information through the media. In targeting these organisations, MLA:

- implemented an integrated GP communication campaign that was clinically relevant to the treatment and management of cardiovascular health, obesity, iron deficiency and other conditions; and
- developed and implemented targeted dietician communications that link into key clinical and public health nutrition issues.

Consumer campaigns

MLA sought to reinforce red meat's role in an essential diet by providing an ongoing positive voice for red meat within a competitive and volatile food and health environment. The *Red Meat. Feel Good* (RMFG) consumer campaign was implemented in two phases.

3.4 The *CSIRO Total Wellbeing Diet*

CSIRO published the *CSIRO Total Wellbeing Diet* (TWD) in 2005 on the back of many years of research and clinical trials, TWD quickly became a bestseller with over a million copies sold nationwide and 100 000 sold internationally.

Momentum for the diet was gained when CSIRO — a leading authority in dietary research — was approached by the health professional industry with concerns about the promotion of high protein diets without reliable supporting evidence. Alternative dietary approaches — such as the *Atkins* and *ZONE* diets —had become increasingly popular.

Studies conducted by CSIRO at their Clinical Research Unit in Adelaide confirmed that varying the protein to carbohydrate ratio during weight loss could produce a number of subtle benefits that could result in greater fat loss and sparing of lean body mass.

A study of 100 overweight and obese women focused on two different diets over a 12 week period. The women were divided into two groups:

- one group was placed on a high protein, low fat diet
- the other group was given a high carbohydrate, low fat diet.

The hypothesis was that, if kilojoule intake for each diet was the same, then CSIRO should not be able to observe any difference in weight loss. But there was — more weight and fat was lost by the women on the higher protein diet, particularly if they had high blood fats, called triglycerides.

In addition, to CSIRO's surprise, more women dropped out of the high carbohydrate diet. This was unexpected as researchers did not expect the high protein foods to appeal to women as much as the starchy foods.

Since the TWD was published, it is estimated that 547 000 Australians have lost weight by following its recommendations and principles (MLA 2007c).

Source: CSIRO and MLA.

- **RMFG, February 2002 to June 2005** was aimed at positioning red meat as a source of vitality and wellbeing, and to capture the joy of living. RMFG was a fully integrated campaign led by television, and included print, online, public relations (PR) and point-of-sale (POS) material. RMFG commenced in February 2002 with the 'Singing Butchers' campaign. This was the flagship of RMFG and ran for all three years of the campaign. RMFG also included tactical elements aimed at building relevance throughout the year — for example, 'get into shape' was a print, POS and PR campaign launched in spring 2003.

- **RMFG II (Foundation Food), March 2006** was aimed at positioning red meat as an essential part of the diet to be consumed three to four times a week and challenging negative attitudes head on. This second phase of the nutrition program was launched in March 2006 as a fully integrated campaign — including television, print, online, POS and PR. The flagship television commercial was the 60 second 'Evolution', which communicates red meat's role in evolution. It ran through 2006 in tandem with 'Library', which specifically spoke to mothers about red meat's important role in brain development.

Investment by MLA

The campaign was run on a budget of approximately $6–7 million per year, with expenditure in 2006-07 budgeted at over $9 million (table 3.5). In total, more than three quarters of the entire nutrition campaign budget was spent on the consumer campaign, which was mainly spent on consumer promotion (chart 3.6). MLA nutrition research was supported by over $2 million in Australian Government matching funds.

What did the campaign deliver?

The campaign's outputs are the tangible products created by MLA's activities. At the top level, there are three major outputs:

- research on the role of red meat in healthy eating and in improving public health;
- a communications program that targeted attitudes and dietary advice of health professionals; and
- an advertising campaign that targeted the attitudes and behaviour of consumers.

Research outputs

MLA laid the foundations for its consumer campaign with an ambitious research and development (R&D) program. MLA's R&D program provided the 'evidence' for its 'evidence based campaign'. The aim of this program is to provide credible and sound nutrition evidence to help MLA understand and communicate:

- red meat's role in a healthy diet
- red meat's contribution to improving public health in Australia
- emerging areas of nutrition and behavioural science.

R&D projects were developed in consultation with an Expert Advisory Committee. This Committee comprised of both industry representatives and academics. It called for tenders on an annual basis in a range of areas of strategic interest to the red meat product. In total, some $4.8 million was spent on MLA sponsored research.

3.5 Nutrition program activity budgets: 2002–07

Activity	*MLA funding*	*External funding*	*Total Funding*
	$000	$000	$000
Health professionals communications			
2001-02	500	0	500
2002-03	500	0	500
2003-04	600	0	600
2004-05	620	0	620
2005-06	559	0	559
2006-07	640	0	640
Nutrition research[a]			
2001-02	438	438	876
2002-03	361	361	721
2003-04	393	393	786
2004-05	445	445	889
2005-06	401	401	801
2006-07	445	445	890
Consumer campaign			
2001-02	5 964	0	5 964
2002-03	4 840	0	4 840
2003-04	4 740	50	4 790
2004-05	5 123	0	5 123
2005-06	4 916	0	4 916
2006-07	7 400	0	7 400
Issues management and government affairs			
2001-02	230	0	230
2002-03	230	0	230
2003-04	280	0	280
2004-05	280	0	280
2005-06	180	0	180
2006-07	205	0	205
Total			
2001-02	7 132	438	7 570
2002-03	5 931	361	6 291
2003-04	6 013	443	6 456
2004-05	6 468	445	6 912
2005-06	6 056	401	6 456
2006-07	8 690	445	9 135

[a] MLA received matching funds from the Australian Government to assist with its R&D funding.

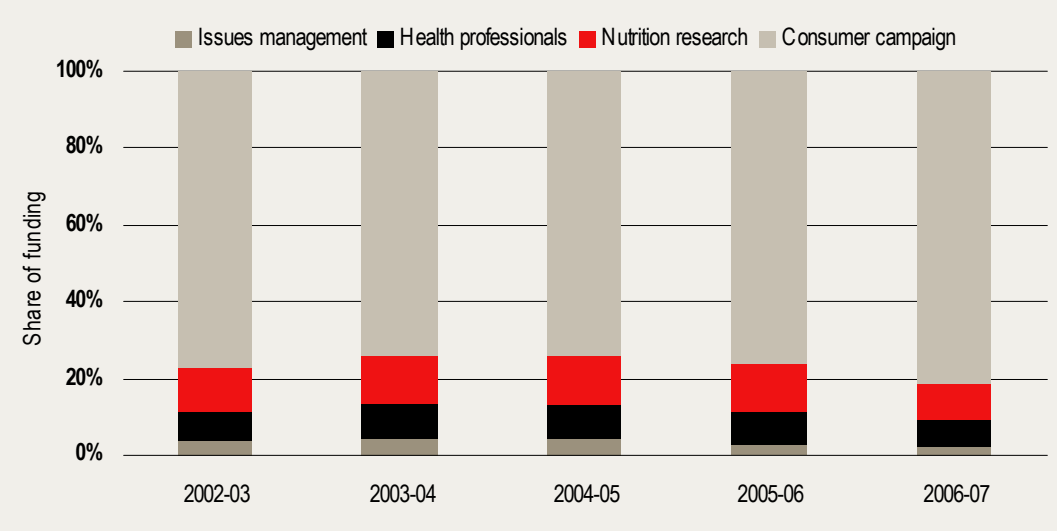
Source: MLA.

The MLA Human Nutrition Research Program follows a transparent and independent process.

- A strategic plan is developed in consultation with key nutrition, government and industry stakeholders to identify public health and marketing research priorities.
- Expressions of interest (EOI) for research proposals are requested each year.
- Research proposals are requested from selected EOI that best meet research priorities.

- Research proposals are reviewed by MLA's Human Nutrition Advisory Committee to ensure scientific rigour.

3.6 MLA nutrition program funding allocation



Data source: MLA.

Between 1998 and 2007, MLA funded a total of 39 projects relating to red meat and nutrition. Ten of these projects were concerned with what the Australian Government Department of Health and Ageing (DoHA) deemed to be *public health priorities*. The most prolific areas of research included heart, stroke and vascular disease, nutrition composition and obesity. Table 3.7 outlines the research program to date.

3.7 MLA nutrition research program

Area of nutrition research	*Projects*	*Expenditure*
	No.	$
DoHA public health priorities		
Cancer	2	180 220
Diabetes	1	199 493
Heart, stroke, vascular disease	7	823 522
Other important areas		
Obesity	6	1 618 815
Nutrient composition	7	468 128
Diet type	4	148 189
Acne	1	140 245
Nutrition status	2	178 203
Toddler nutrition	2	261 563
Elderly nutrition	2	235 350
Review/collation of information	5	207 653

Note: An additional $298 163 was spent by MLA on the communication of research and other miscellaneous expenses of the committee.

Source: MLA.

Commissioned research was conducted through collaborative and independent efforts by prominent Australian and New Zealand institutions and health professionals. A list of institutions commissioned by MLA for red meat nutrition research is reported in table 3.8.

3.8 Institutions commissioned to undertake MLA nutrition research

Commissioned institution	*Commissioned institution*
Royal Melbourne Hospital Research Foundation	University of Melbourne
CSIRO	University of New England
Curtin University	University of Newcastle
Deakin University	University of Otago (NZ)
International Diabetes Institute	University of South Australia
Children's Hospital Westmead	University of Sydney
NSW Centre for Public Health Nutrition	University of Western Australia
Royal Melbourne Institute of Technology	University of Wollongong
Women's and Children's' Hospital, Adelaide	

Note: A number of health professionals, unattached to institutions, also contributed to MLA research efforts, these are not listed.
Source: MLA.

The quality of research output is often judged by the quality of the journal that publishes this research. And, indeed, the results of much of MLA's commissioned research were published in refereed journals and presented at scholarly conferences. These included a number of top tier journals such as the:

- *American Journal of Clinical Nutrition*
- *European Journal of Clinical Nutrition*
- *Archives of Internal Medicine*
- *Journal of the American Academy of Dermatology*
- *International Dermatology Journal*
- *Australian Nutrition and Dietetics Journal*
- *Journal of Nutrition*.

MLA has recently prepared a strategic plan for human nutrition research and development for 2007 through 2010. This framework will continue the current program of research, targeting strategic areas of interest to MLA.

Communications with health professionals

Health professionals are often cynical about the information they receive from industry. Information from experts and peers is understandably more credible than information from a commercial organisation. MLA used the outputs from the research they sponsored to deliver their two key messages:

- for optimum vitality and performance, red meat should be eaten three to four times per week; and
- there are medical conditions (for example, high cholesterol) for which an increase in red meat consumption is necessary.

To best communicate with health professionals, MLA employed a variety of mediums, tailored specifically to communicate with this market. They included:

- a set of core advertisements that ran consistently in medical journals and weeklies;
- advertorials to reinforce the evidence-based approach of the campaign;
- a series of tactical event-based advertisements;
- promotional material, such as CD-ROMs, recipe booklets and patient information resources; and
- participation at medical and health professional conferences.

MLA also produced a quarterly newsletter, *Vital*, which was distributed to around 4000 dieticians and nutritionists, and a website *www.meat4health.com.au*, both of which are vehicles to communicate their latest research as well as provide a resource for professionals to give to their patients. MLA's nutrition website also contained basic information, patient fact sheets and links to nutrition research.

The consumer campaign

MLA launched their consumer campaign *Red Meat. Feel Good* in February 2002. It was designed to 'increase consumer confidence in the health benefits of red meat in order to drive red meat consumer expenditure and domestic demand' (MLA 2005). The target audience of the campaign was largely mothers with children aged 5–17 years.

In 2005 the campaign was relaunched as *Foundation Food.* This updated marketing strategy refocused MLA's message, describing red meat as a 'must have' food. The objective of this campaign remained one of challenging consumer beliefs about red meat and elevating red meat's status as essential to a healthy diet.

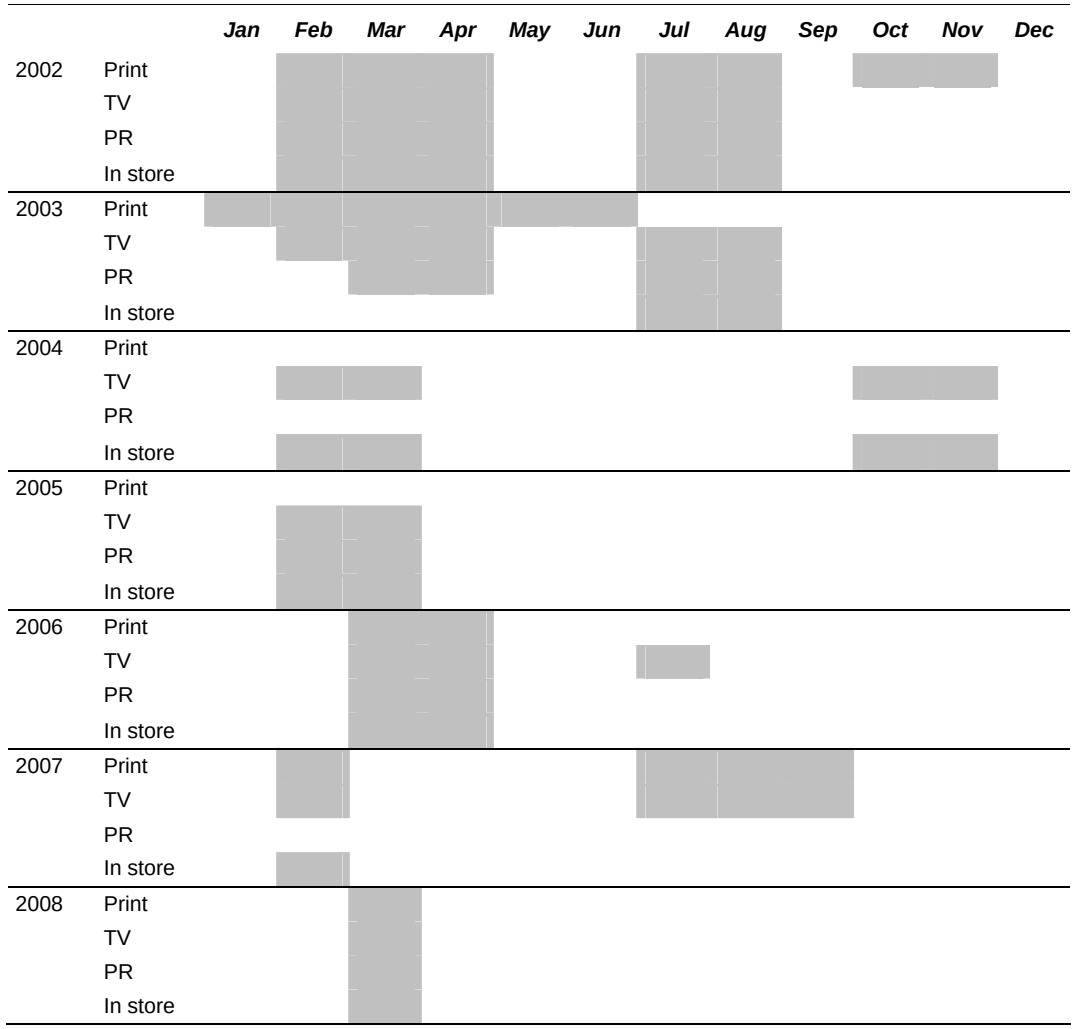
Both marketing campaigns were headlined by a series of television commercials. Television commercials were supported with print, POS promotion and PR support. Table 3.9 outlines MLA's commercials, and includes the timing of their key bursts for each marketing campaign. Commercials were aired during key tactical times throughout the year to take advantage of key events and consumer trends (table 3.10). For example, commercials were aired to take advantage of the prime 'dieting season', 'back to school' periods and significant media events such as the *Rolling Stones* tour in February 2002.

3.9 MLA nutrition campaigns

Commercial	*Key bursts*	*Notes*
Red Meat. Feel Good.		
Singing Butchers	Feb–Mar 2002 July–Aug 2002 Mar–Apr 2003 Feb–Mar 2004 Oct–Nov 2004	▪ Flagship television commercial to celebrate the vitality and wellbeing from eating red meat three to four times a week. ▪ Integrated media campaign combining POS, print and PR tie ins.
Soccerpath	April 2002 Jul–Aug 2002 Mar–Apr 2003 Feb–Mar 2005	▪ Campaign targeted mums with the 'three to four serves per week' message. ▪ Integrated media campaign combining POS, print and PR tie ins.
Stairway to Heaven	February 2003 Jul–Aug 2003	▪ Tactical media campaign combining POS and PR with a television commercial coinciding with the *Rolling Stones* tour.
Get into shape	Oct–Nov 2002 Jan–Feb 2003 Mar–Apr 2003 May–Jun 2003	▪ Tactical print campaign in *Weight Watchers Magazine.*
Foundation Food		
Evolution	March 2006 July 2006 February 2007 Jul–Aug 2007	▪ Flagship television commercial to communicate the essential nature of red meat in the diet. ▪ Integrated media campaign combining POS, print and PR tie ins.
Library	Mar–Apr 2006 July 2006 Aug–Sep 2007	▪ Campaign targeted mums communicate the importance of red meat for brain development in children. ▪ Integrated media campaign combining POS, print and PR tie ins.
Meerkats	February 2007	▪ Media campaign combining POS and PR with a television commercial to communicate our 'innate desire for red meat.'
Chicken	March 2008	▪ Highlights the nutrient benefits of red meat versus chicken. ▪ Integrated media campaign combining POS, print and PR tie ins.
Print campaign	Jul–Sep 2006 Oct–Nov 2006	Continuous print campaign.

Source: MLA.

3.10 **Campaign calendar**



Source: MLA.

4 Changes in attitudes

The previous section detailed how the *inputs* and activities of MLA culminated in producing the program *outputs*. Specific *outputs* were designed to generate targeted *outcomes*, which in turn were to have an *impact* on red meat sales and consumption. This section extends the logic mapping of the previous section and describes the *outcomes* that were achieved.

The main objective of the nutrition program was to stimulate demand by overcoming negative consumer and health professional attitudes. These negative attitudes acted as the major barriers to increasing the demand of red meat by Australian households.

The program's *outcomes* are the induced changes in preferences, tastes or incentives that are caused by MLA's activities. The program sought to influence the perceptions of health professionals and consumers, which in turn would have an effect on the incentives facing retailers and industry.

This chapter focuses on providing an assessment of the observed changes of a set of core key performance indicators that MLA tracks to assess receptiveness and the outcomes from the nutrition campaign.

Promoting red meat among health professionals

The health professional campaign was developed in March 2001, based on the launch of the Expert Report, *The Role of Red Meat in Healthy Australian Diets*. This report was disseminated to dieticians and GPs through a direct mail campaign and communications with key health organisations. The key messages focused on nutritional strengths of lean red meat and the dietary guideline recommending lean red meat three to four times a week. It also focused on lean red meat's role in dietary management of patients with a range of lifestyle diseases, including obesity and high cholesterol, and with certain conditions such as acne and iron deficiency anaemia. This message was delivered to GPs through advertising and direct mail, and to dieticians through the *Vital* newsletter, direct mail and trade exhibits.

To some extent, we are able to gauge and measure outcomes of the campaign using survey data collected by MLA. Surveys of health professionals were commissioned by MLA at annual or biannual intervals over the period of February 2001 to February 2008. The surveys asked general practitioners and dieticians about their awareness of research based evidence that red meat could assist with the management of certain

health risks. We have chosen a set of measures that provide the most consistent data set — it should be noted that these are not necessarily program KPIs.

It should also be noted that, although GPs generally agree that diet and nutrition play a significant role in most conditions (95 per cent agreeing with that statement in 2006), most feel that dieticians are 'better placed' to offer advice (81 per cent agreeing with the statement). Moreover, nearly half of GPs surveyed indicated that offering nutrition advice in a general practice was 'difficult'. Consequently, we might anticipate from the outset that any response to nutrition promotions may be tempered. But figures quoted earlier in the report suggested that GPs were the most common and credible source of nutritional information for consumers. Given this, GP attitudes and perceptions are important measures for MLA to consider.

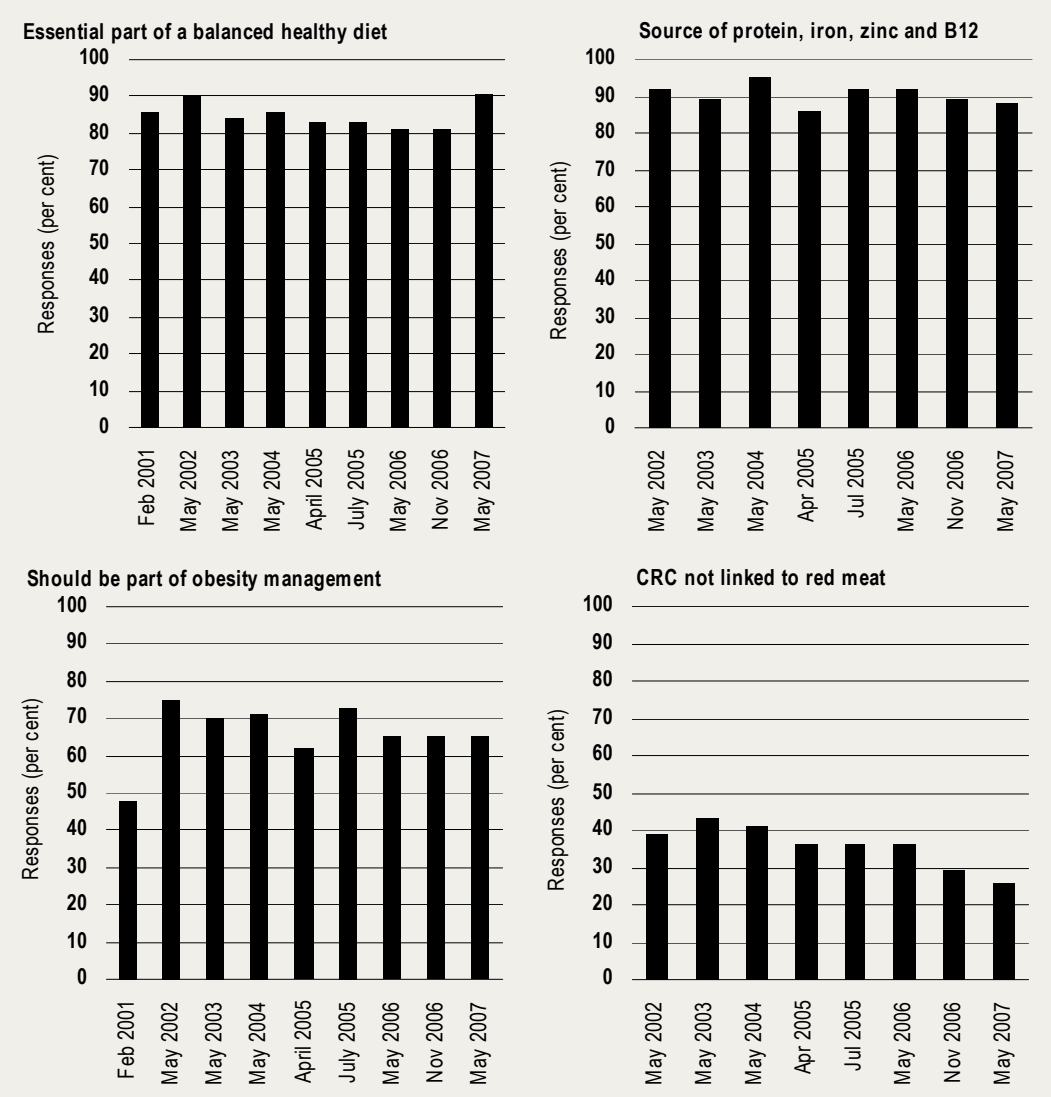
At the beginning of the sample in February 2001, 86 per cent of GPs either agreed or strongly agreed with the statement that 'nutrients in lean red meat make it an essential part of a balanced healthy diet'. This proportion increased to 90 per cent after the first year of MLA's activities and remained relatively high over the period, dropping only to 81 per cent in May and November 2006, but peaking in May 2007 at 91 per cent (chart 4.1). Similarly, the majority of GPs saw red meat as 'source of protein, iron, zinc and vitamin B12'. (Note: this measure was not a program KPI.)

However, GPs seem less convinced on potential treatment and condition management. After an initial surge between 2001 and 2002, the proportion of GPs agreeing with the statement that 'lean red meat should be used to assist with obesity management' declined marginally over the period, but still remained high overall. Between May 2002 and May 2007, GPs agreeing with the statement that 'colorectal cancer (CRC) is not linked with red meat' declined by over ten percentage points. That is, the attitudes of GPs *deteriorated* over the campaign period.

Dieticians began with a seemingly more sceptical stance from the outset, but warmed to red meat over the period. In 2001 only 67 per cent of dieticians surveyed agreed that the 'nutrients in lean red meat make it essential part of a balanced healthy diet'. This proportion, however, increased over the period and, after three years, had reached 86 per cent.

Dieticians also became increasingly convinced of the benefits that red meat could provide to patients with obesity problems and high cholesterol (chart 4.2). Nearly 90 per cent of dieticians surveyed in 2007 would recommend lean red meat for patients with cholesterol problems, up from 54 per cent in 2002. The proportion of dieticians who recognise the satiating properties in lean red meat to help manage obesity problems rose by 14 percentage points over the period as well. These trends contrast with those of GPs, whose opinions remained largely constant (but generally positive) over the period. The key difference is that GP perceptions started out at much higher levels than dieticians. Similar to their GP counterparts, however, dietician beliefs about the links between red meat consumption and colorectal cancer and also declined over the five years to 2007.

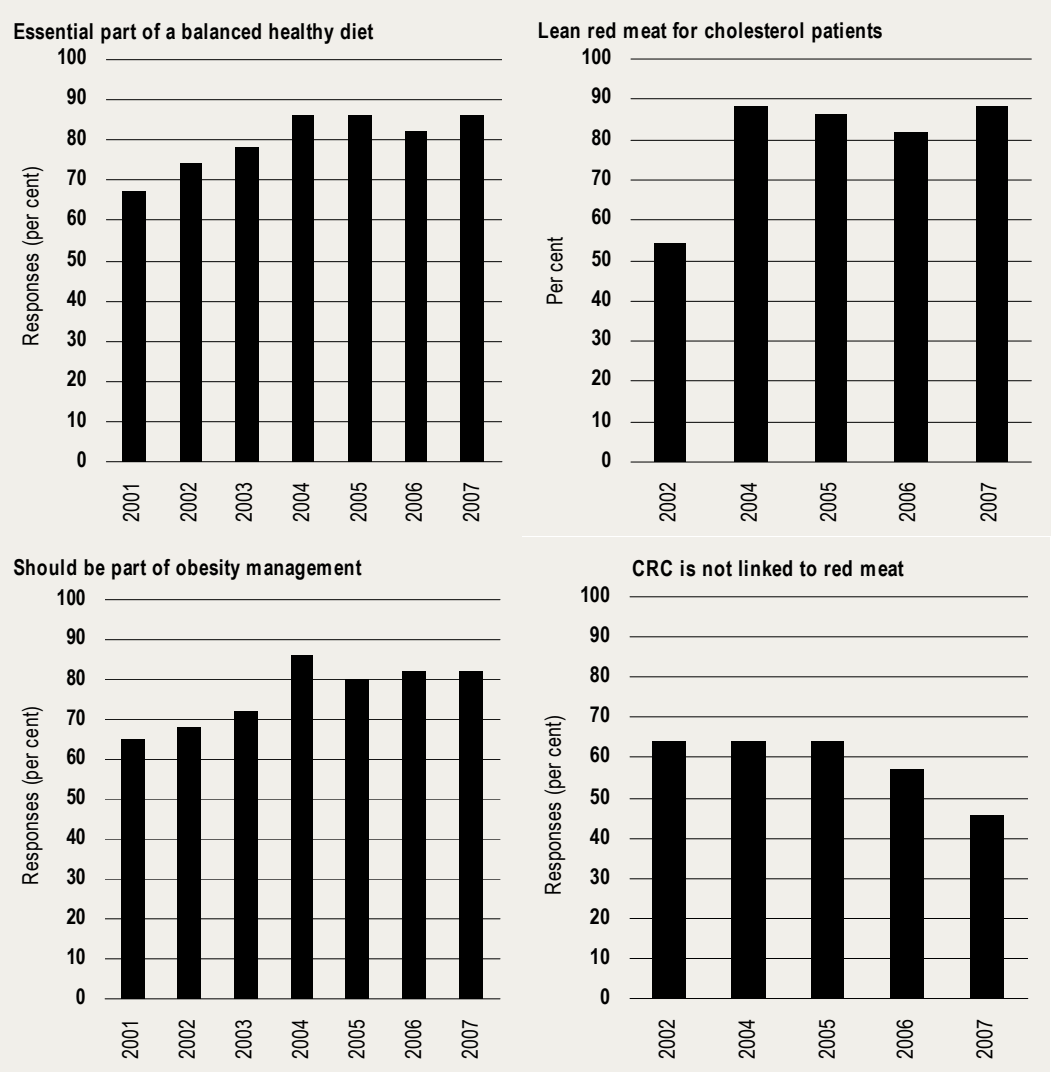
4.1 GP attitudes towards red meat



Note: CRC is Colorectal Cancer. CRC linkage and protein, iron, zinc and B12 measures were not program KPIs.
Data source: MLA commissioned research by Wendy Bloom Research and Robinson & James Research (unpublished).

A key component of both the health professional and consumer campaigns was the message that a healthy diet contains three to four serves of red meat a week. Chart 4.3 shows that this message has been well received by dietitians, but less so by GPs. Between 2001 and 2002 the proportion of GPs that agreed with this statement increased sharply from 59 per cent to 73 percent, but this change in belief decayed steadily over the following years, falling to 64 per cent 2007. The proportion of dieticians agreeing with this statement increased by 26 percentage points over the same period, but did not show any signs of decay.

4.2 Dieticians are receiving the message



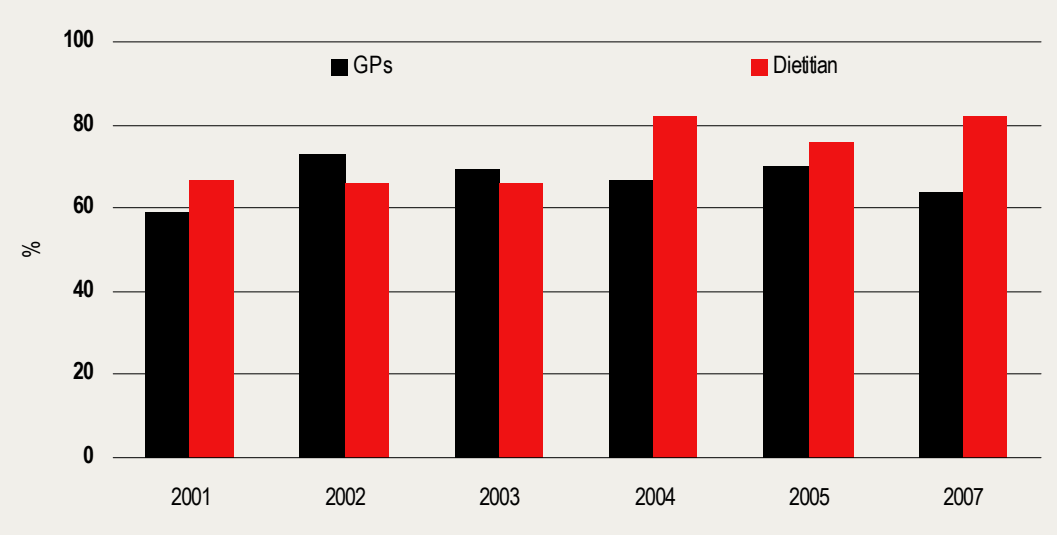
Note: Cholesterol and CRC measures were not program KPIs.

Data source: MLA commissioned research by Wendy Bloom Research and Robinson & James Research.

The observed change in attitudes was accompanied by a change in health professional behaviour. The proportion of GPs *recommending* that their patients eat red meat three to four times a week increased by some 16 percentage points during the campaign. Dieticians saw nearly double this increase over the period — the proportion recommending red meat in the target quantity rising from 55 per cent to over 80 per cent (chart 4.4)

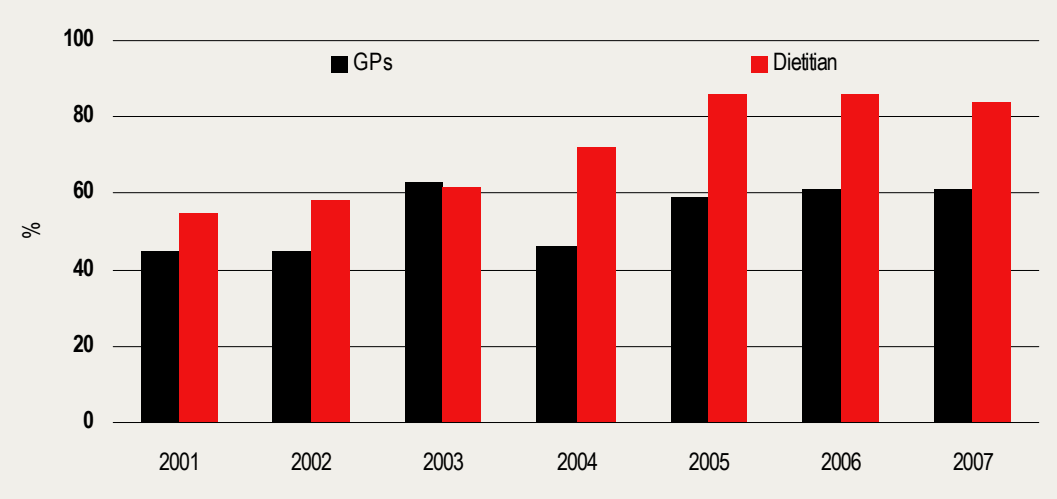
The nutrition campaign seemingly influenced dieticians more than GPs. Dieticians are specialists in this space and may, therefore, be more receptive to MLA's activities. For both types of professionals, however, most of the significant changes that did occur coincided with MLA's initial activities in this space.

4.3 Health professionals who agree that red meat should be served three to four times per week



Data source: MLA commissioned research by Wendy Bloom Research and Robinson & James Research.

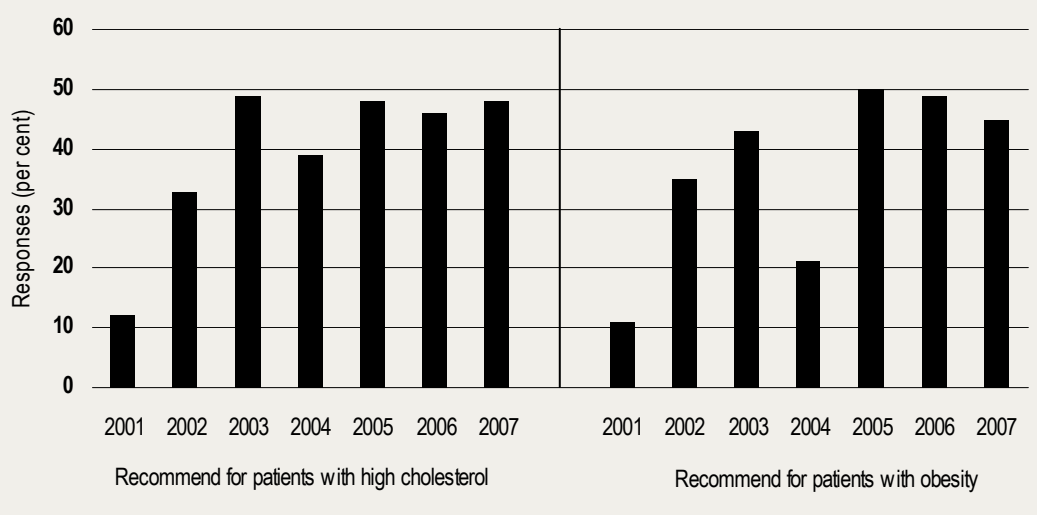
4.4 Health professionals who recommend that red meat should be served three to four times per week



Data source: MLA commissioned research by Wendy Bloom Research and Robinson & James Research.

Notably, MLA's message about the benefits of three to four serves of red meat per week is resonating more strongly among GPs in their treatment of specific patient types. In 2001 the proportion of GPs recommending three to four serves of red meat for patients with high cholesterol was only 12 per cent — and 11 per cent for patients with obesity. In 2002 these figures had risen to 33 and 35 per cent respectively, and by the end of the period both were near 50 per cent (chart 4.5).

4.5 **GPs recommending three to four serves of red meat for specific patient types**



Data source: Unpublished MLA commissioned research by Wendy Bloom Research and Robinson & James Research.

The trends in the data shown above suggest that MLA's targeted communications coincided with a positive change in attitude of its intended audience for 3 out of 4 indicators captured by the survey. But these same survey results are not sufficiently detailed to identify how much of this change can be directly attributable back to MLA activities as the primary source of this information, relative to the other health and diet-related media and thinking that were accessible at the time of campaign.

Improving consumer attitudes

The consumer campaign was two-pronged in its approach: first to increase perceptions that red meat is a healthy source of nutrition, and second to promote the association of red meat with images and suggestions of pleasure and enjoyment. The overriding core objective of the program was to position red meat as an essential part of a balanced diet. Again, we can turn to tracking data to gauge the effect of the campaign in achieving these outcomes.

MLA has conducted tracking of consumer attitudes since the campaign began. Unfortunately for our purposes, however, this data has not been collected in a way that allows for a consistent data set to be compiled for the entire period. Rather, there are three separate data sets available:

- periodic data collected over the period 1999 to December 2003 through face-to-face consumer interviews;
- weekly data collected over the period January 2004 to June 2006 through CATI; and
- weekly data collected during July 2006 to present using online surveys.

Caution should be used when attempting to compare the data across these three different data sets. Face-to-face surveys were conducted in 'waves' to test the impact of specific advertising campaigns, while both the CATI and web based surveys ran continuously.[2] In addition, although the data collected with CATI and web surveys used similar sets of questions, they both differed from the initial survey method (face-to-face).

We have compiled the CATI and web surveys into a continuous time series for illustrative purposes. This produces a weekly series over 204 weeks beginning in January 2004, and ending in February 2008. (Note that data was not always collected over Christmas holiday period.) Table 4.6 reports the key descriptive summary statistics of the data collected.

4.6 Consumer tracking data summary statistics

Variable	*Unit*	*Face to face*	*CATI*	*Web*
Period		1 Jan 2002 to 31 Dec 2003	12 Jan 2004 to 22 Jun 2006	3 Jul 2006 to 25 Feb 2008
Observations	No.	2 496	6 750	8 710
Weeks	No.	104	127	87
Ave weekly observations	No.	24	55	106
Cities sampled		Sydney, Melbourne, Brisbane	Sydney, Melbourne, Brisbane, Adelaide, Perth	Sydney, Melbourne, Brisbane, Adelaide, Perth
Females	%	75	74	74
Mothers with kids	%	na	30	25
Mean household income	$	na	69 338	72 242
Mean age of respondent	Years	na	44.0	42.9

na Not available.

Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

There are some consistency problems in joining the samples. In most of the data series, the change in survey methodology appears to impact on the data's 'level', but not necessarily of any trend momentum. There was also a substantial reduction in the amount of variance the data experiences after the change in 2006. This is likely due to the web survey being conducted on a significantly larger sample. Feedback received from marketing analysts *Millward Brown* suggest that this is not unusual, and ought to be expected. Moreover, *Millward Brown* argue that responses received from web surveys are likely to be more accurate than CATI responses. We note, however, that this is a contentious issue in the literature. Box 4.7 further explains the technique for controlling for survey mode. There have also been discussions surrounding the presentation of the tracking data. The main points of discussion have been around the use of only continuous data versus discrete 'snapshot' data. Box 4.8 discusses this further.

[2] To analyse the data, CIE aggregated data from both these samples into weekly time series.

4.7 Controlling for survey mode

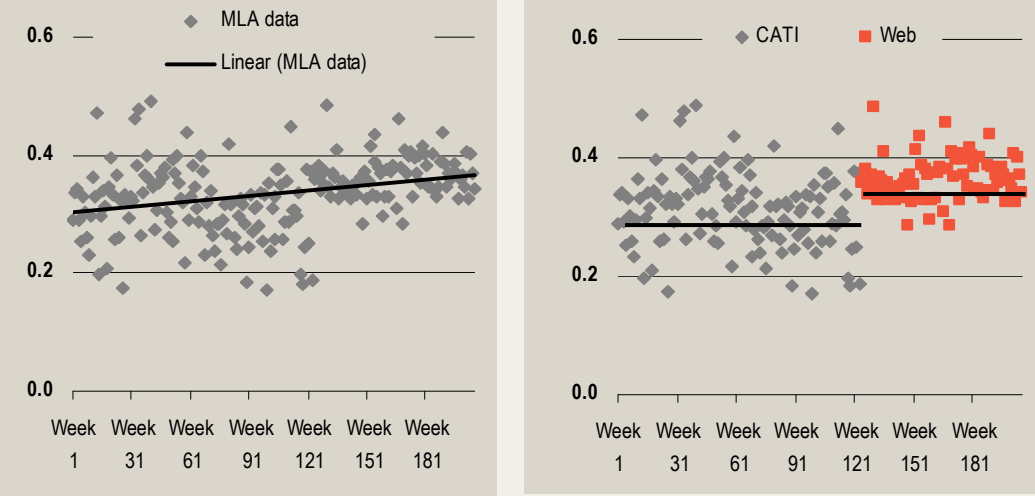
The two charts below show two different cuts of the same data from MLA's consumer tracking survey. They are drawn from CATI and web surveys conducted between 2004 and 2008.

Individually, a raw data point does not possess a great deal of analytical value for our purposes. Every point in a series is influenced by a set of external factors that we cannot measure. Changes in these external factors can create significant variance in the series.

When we look at the data collectively, however, the data points may reveal either a trend in the series, or a crucial turning point that may be of interest. To isolate this trend, we can use what is known as an *Ordinary Least Squares* (OLS) estimation. An OLS estimation plots the 'line of best fit' through the data and tests can be performed to see if this trend is *statistically significant*.

The first chart shows the OLS estimation through the entire series. The trendline, or line of best fit, suggests that the general level of the data is increasing over time. That is, for each week that passes, the data's underlying level is increasing despite the weekly fluctuations in external factors.

This conclusion, however, may be misleading. In fact, once we control for the change in surveying methodology, the data trend is completely removed. To test this we can perform an OLS estimation on our data and a control variable. This control variable, or *dummy variable*, is equal to 1 if the survey is performed online (post-July 2006) or 0 if interviewed by phone. If the dummy is statistically significant, and time is not, then we can conclude that 'time' has no impact on the data (assuming that the survey methodology is not correlated with something potentially explanatory, such as a significant change in the scale and direction of the nutrition campaign). This leads to a far different conclusion to what we previously had reached.



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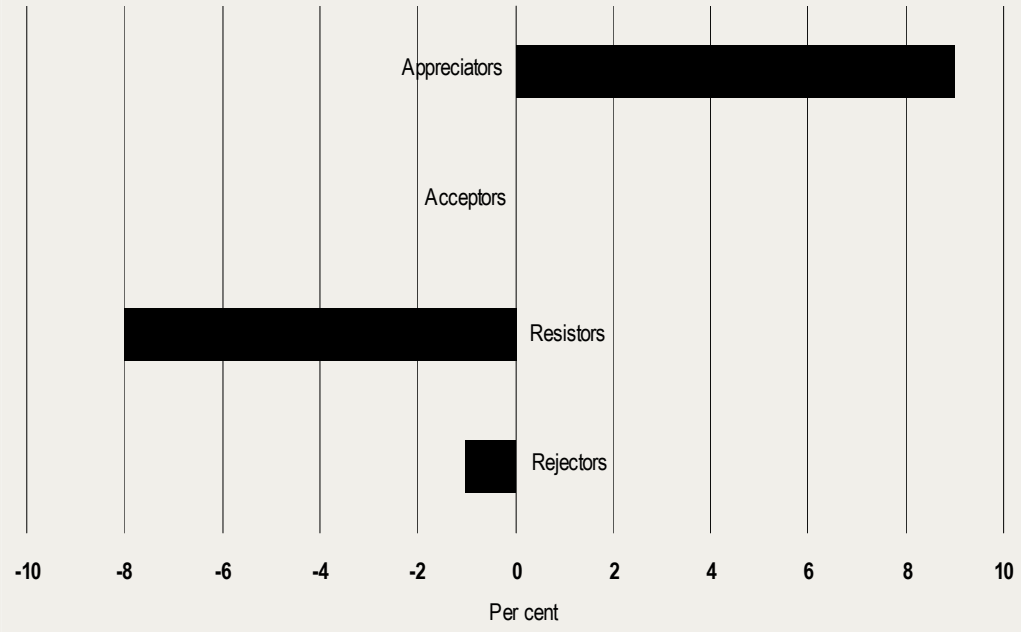
4.7 **Controlling for survey model** Continued

A control study was conducted by Milward Brown when the MLA consumer tracking was moved from CATI to online sampling. The control study was conducted to test for differences in responses obtained via the different survey modes.

The chart below shows how survey mode impacted on consumer types. Respondents to the online survey were more likely to respond positively than those responding in the CATI survey. The proportion of respondents regarding themselves as appreciators was 9 percentage points higher when answering online. And, correspondingly, those answering in the negative categories (rejectors and resistors) were 9 percentage points lower.

Impact of survey mode on survey response Difference between online and CATI survey modes



It should be noted that, due to the fact that this analysis is limited to the period 2004 to 2008, it does not include the first two years of the initial RMFG campaign. This is not an ideal situation, but is unavoidable due to the incomparability of the data sets.

Health and nutrition

The consumer campaign's health and/or nutrition component was spearheaded with the message that a nutritious diet consists of three to four serves of red meat per week. Chart 4.9 shows the proportion of consumers who were able to correctly identify this message over the four year period. We were unable to identify a statistically significant trend — positive or negative — in the proportion of

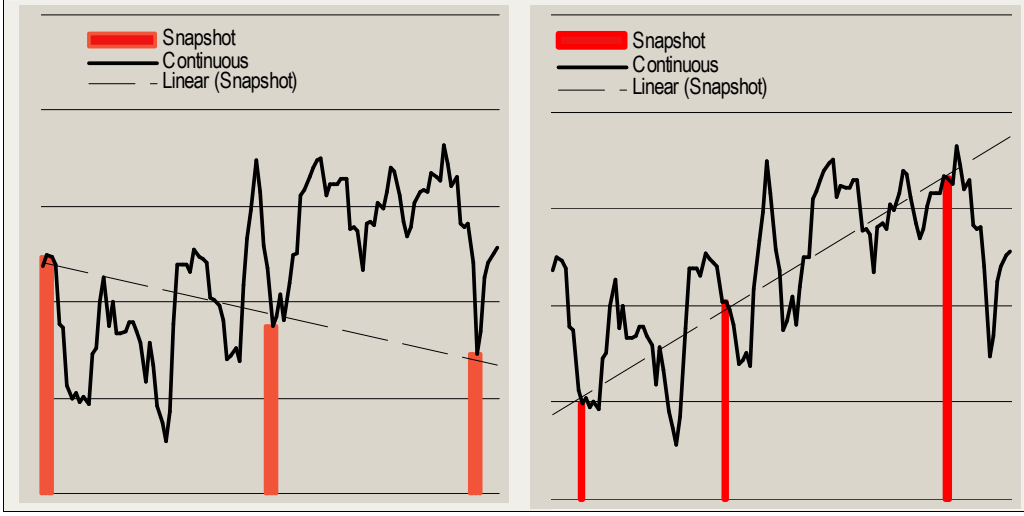
4.8 Trends and snapshots

One limitation of the complete data set collected by MLA over the years is that has the data set has only been collected *continuously* since 2004. Prior to 2004, attitude and behaviour data was collected at *discrete* intervals coinciding with the airing of television commercials and consumer campaigns. It is difficult to compare the two series and, in fact, doing so may lead to incorrect inferences being made about the data.

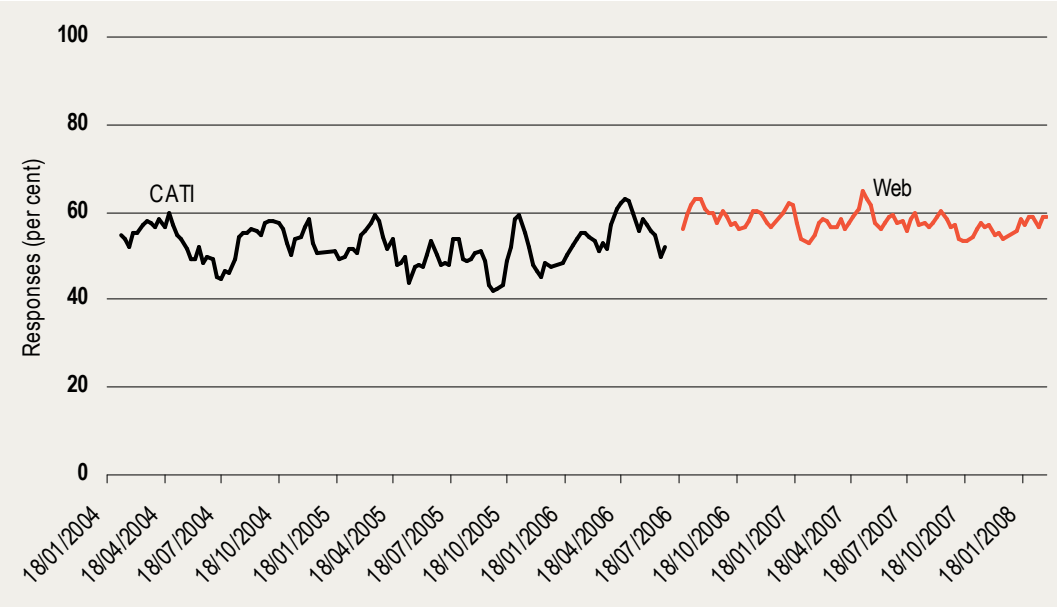
A continuous data series contains data collected at regular intervals of time series. Such a series is likely to contain fluctuations around trend. For example, in any one year, household consumption is likely to rise in December and fall in January. That is, demand is seasonal. Generally speaking it is the data's 'trend' that we are most interested in.

A data set consisting of a series of 'snapshots' collected at targeted intervals may not reveal the data's underlying trend. Snapshots can, however, can provide some indication of change between pre and post scenarios. The challenge is being able to meaningfully interpret the data and recognising its limitations with regard to being combined with trend data. Snapshots can be used to either magnify a data's trend, or reverse it completely. This has been illustrated in the example below. A continuous data series has been overlaid with a collection of snapshots. The continuous data shows an underlying trend that is marginally increasing. In left hand side diagram, the snapshots show a declining trend, while the right hand side shows a rapidly increasing trend. Both stories are misleading.

When trying to establish a trend in the data for this evaluation, MLA's pre-2004 data cannot be viewed as simply an incomplete extension of MLA's continuous (post-2004) data. Snapshots may reveal a sense of pre-existing attitudes and behaviours, but without an appropriate context it is unclear where these data points lie in fluctuations about that trend. For this reason, the focus of our analysis relies mostly on the continuous data available.



4.9 Per cent of consumers correctly identifying three to four meals per week message



Note: Consumers surveyed by MLA were asked to identify 'how many red meat meals [did they] believe per week is a **healthy target** for [their] family?'.

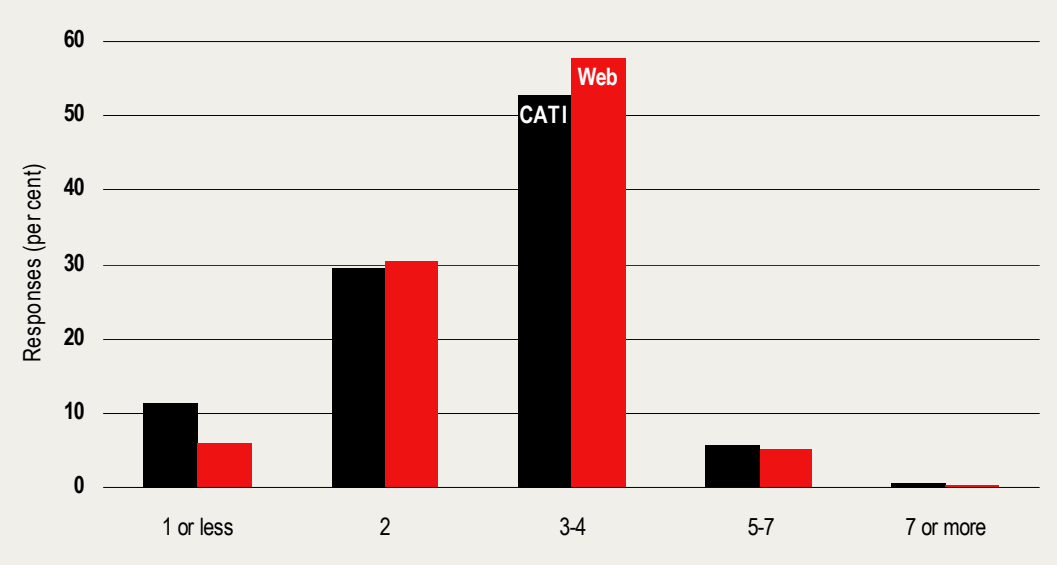
Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

consumers able to identify MLA's message once we controlled for the survey's methodology. Moreover, although the MLA's marketing program targeted female consumers as the main purchasers of household grocery items, there was no significant difference between female consumers and the total — a correlation of 0.88.

Over 50 per cent of consumers (the CATI sample average was 53 per cent while the web survey average was 58 per cent) were able to correctly identify this message. And those that did not were most likely to be one meal below the target range (chart 4.10). This is consistent with MLA beliefs that consumers constrain their red meat consumption because of health concerns.

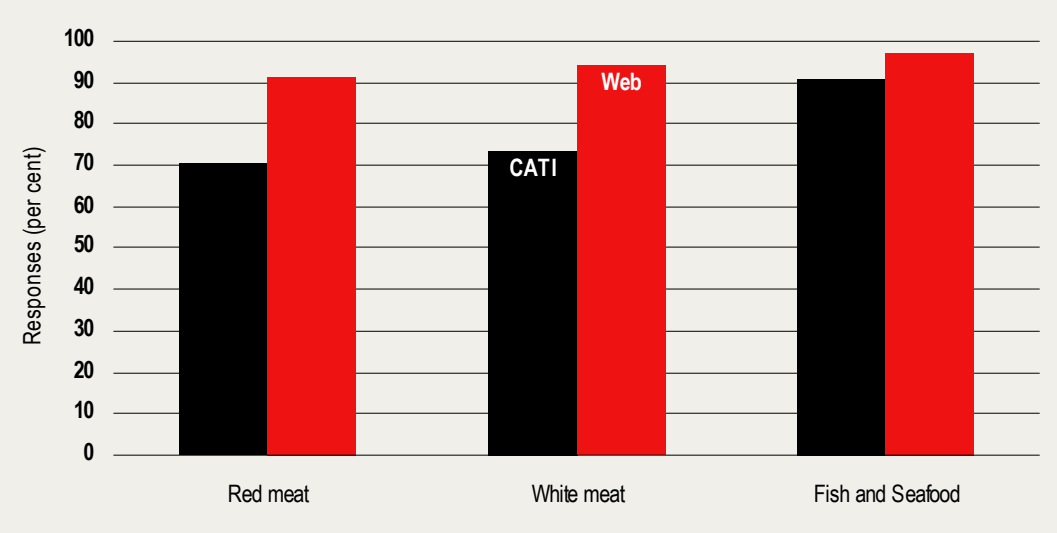
Consumers regarded fish and seafood the healthiest meats, chicken second, and red meat a close third (chart 4.11). (Note that no data was available for pork.) All three meat groups are viewed as healthy by the vast majority of consumers surveyed. In fact, responses from the web survey suggest that over 90 per cent of consumers regarded each meat type as either 'somewhat healthy' or 'very healthy'.

4.10 **How many red meat meals do you believe per week is a healthy target for your family?**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

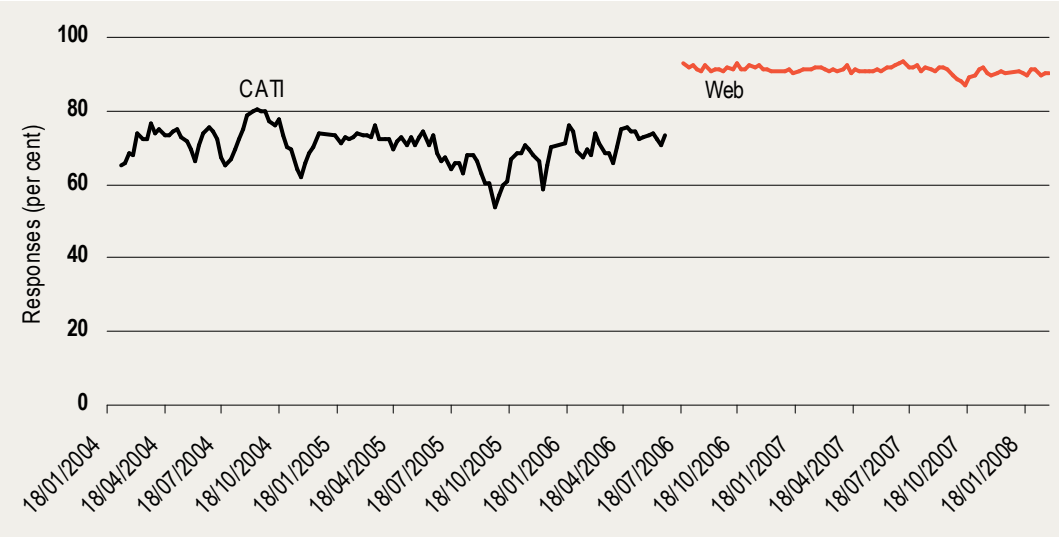
4.11 **Health attitudes towards meat, sample averages**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

We did not expect to witness any significant trend over time. Simply put, there was very little opportunity for the data to improve from an extremely high starting point. Mapping consumer beliefs in chart 4.12 reveals that this is the case. A regression analysis of this data revealed no trend in consumer health attitudes after accounting for this structural break. Subdividing responses into 'somewhat healthy' and 'very healthy' also showed no trend.

4.12 **Health attitudes towards red meat**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

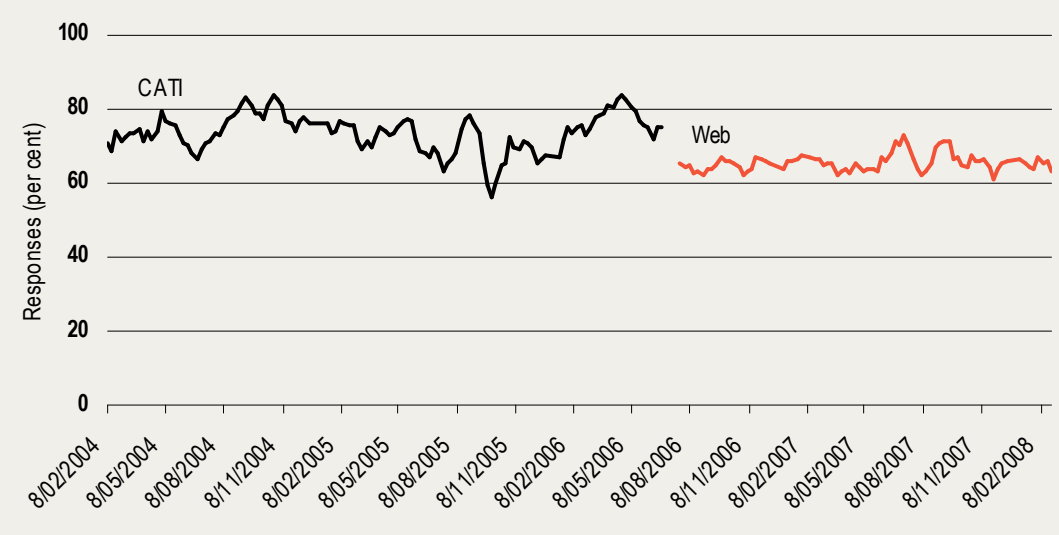
More specific indicators were also unable to reveal long term trends in the data. Consumers were asked in the survey whether or not they agreed with the following nutrition related statements about beef and red meat:

- Beef is an essential part of a healthy diet (KPI).
- Red meat makes healthy meals.
- Beef contains a wide range of vitamins and minerals.
- Beef is good in a weight loss diet.
- Red meat is essential for vitality healthy and wellbeing (KPI until 2006).
- A diet including red meat is more important for my health than I previously believed (KPI).
- Red meat is essential for a healthy mind (KPI 2006 onwards).

It should be noted that not all these statements were specific KPIs for the nutrition program. KPIs are noted where applicable and other measures were chosen both for relevancy to nutritional perceptions and where the richest consistent data set was available.

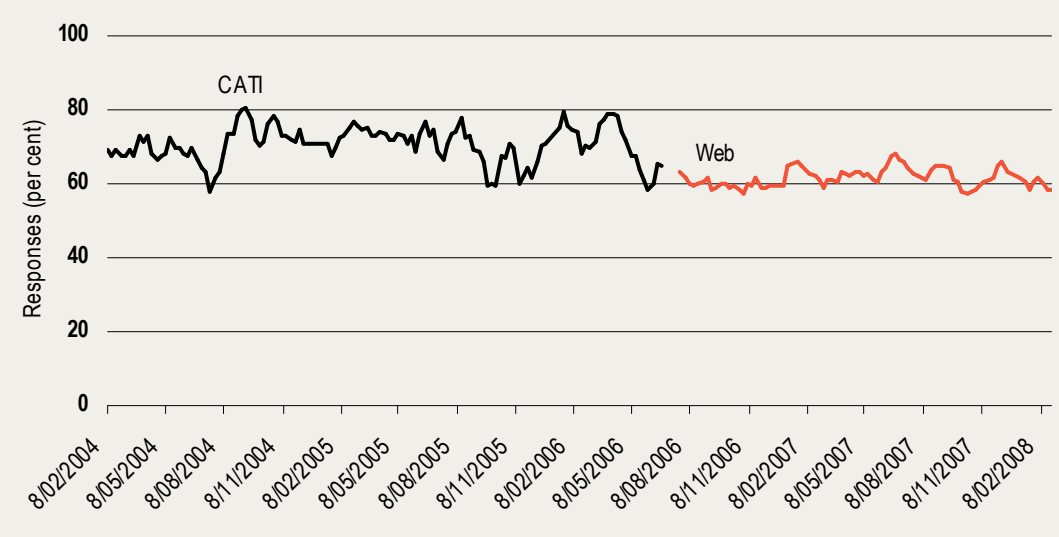
The proportion of consumers responding positively to each statement is shown in charts 4.13 to 4.20. In each of the data series there seems to be a general decline across all four indicators from late 2004 to early 2006, before recovering at the end of the CATI sample. Data collected via the web survey is much more consistent, with little movement across the mid 2006–08 period. Although there is no medium or long term trend in the data, there is a high degree of correlation in consumer responses.

4.13 **Beef is an essential part of a healthy diet**



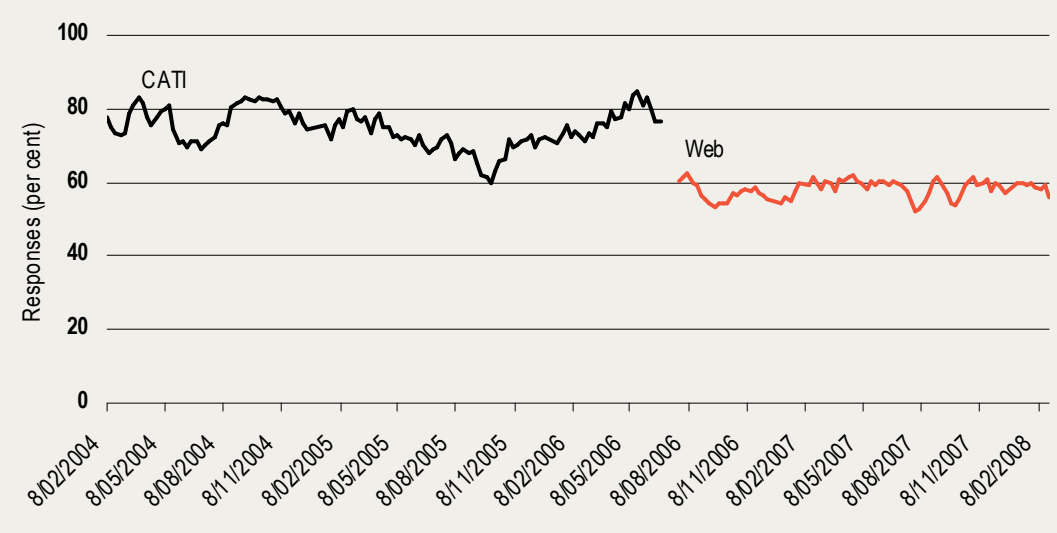
Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

4.14 **Red meat makes healthy meals**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

4.15 **Beef contains a wide range of vitamins and minerals**

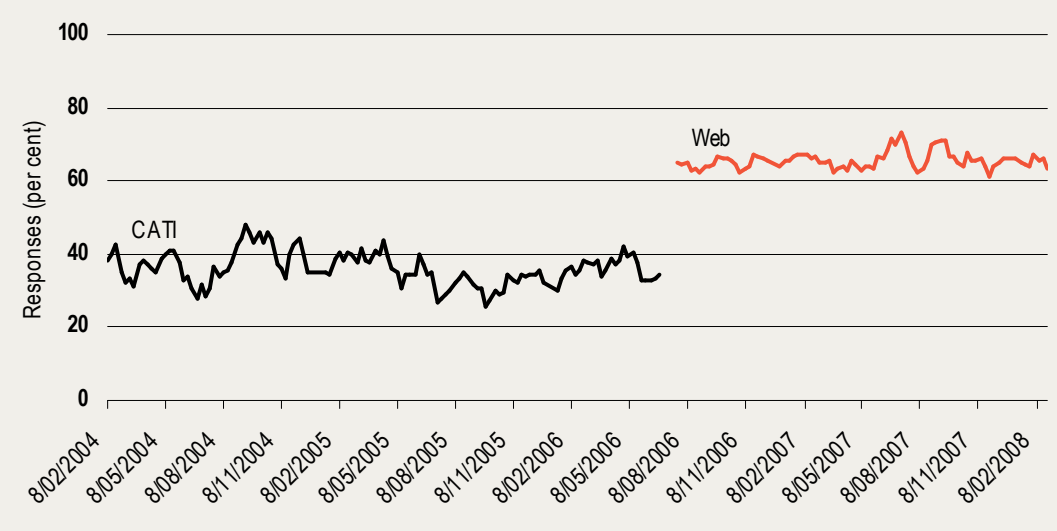


Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

Beef and red meat did score reasonably across nutrition statements. In most cases greater than 60 per cent of the population agreed with the nutritional qualities of beef and red meat. The exceptions being 'weight loss management' which averaged only a low 36 per cent over the CATI sample — although this indicator improved drastically under the web sample to 66 per cent — and 'Red meat is essential for vitality and wellbeing' which averaged around the 80 per cent mark under both samples.

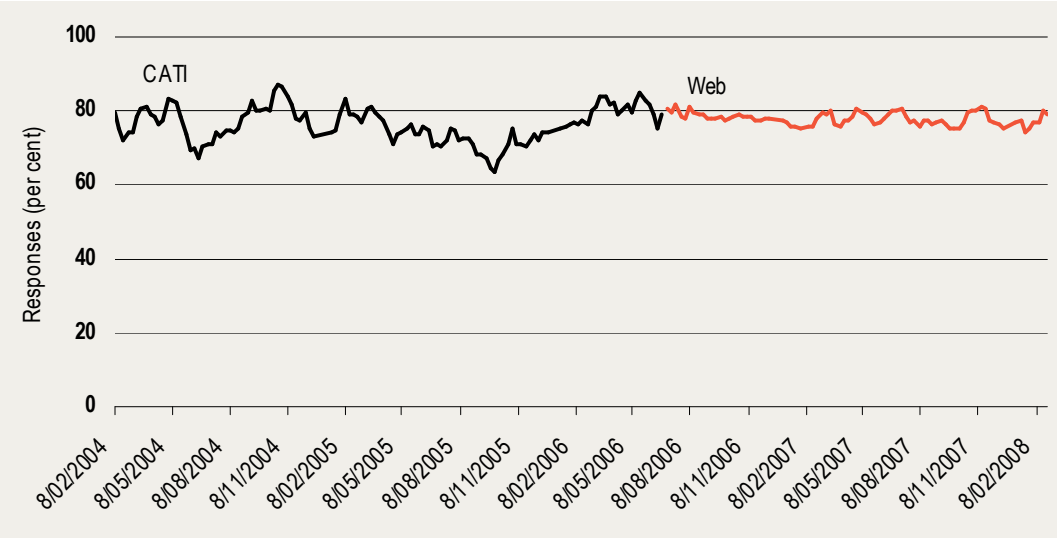
We note that unlike the data in chart 4.12, which persisted at a high level over the period, there was room for improvement in some of these indicators. Perhaps the bleaker conclusion to draw on the above data trends is that about 35–40 per cent of consumers consistently *disagreed* with these statements over the period. Despite MLA efforts, no improvement was gained (or lost) over the four years for which we have data.

4.16 **Beef is good in a weight loss diet**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

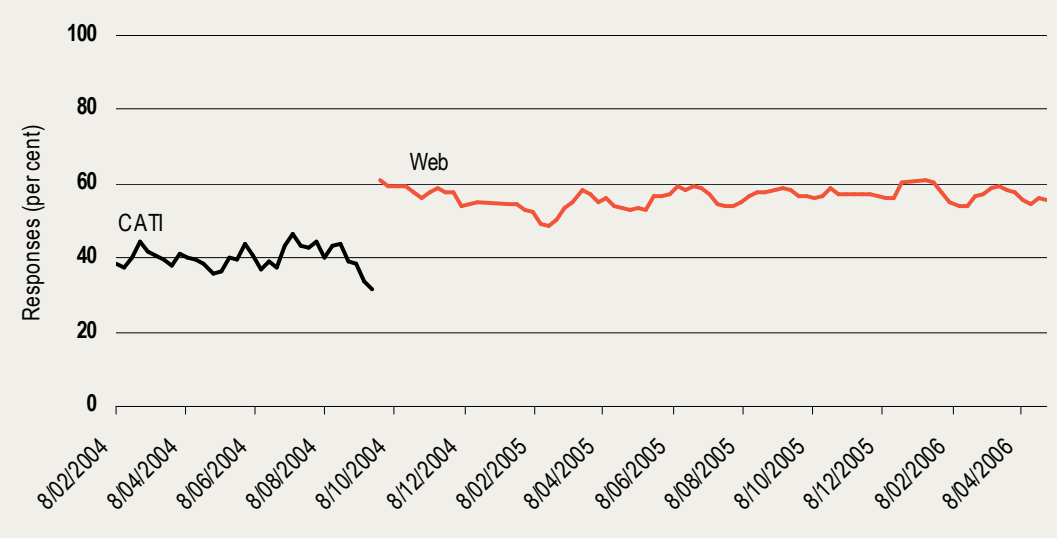
4.17 **Red meat is essential for vitality and wellbeing**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

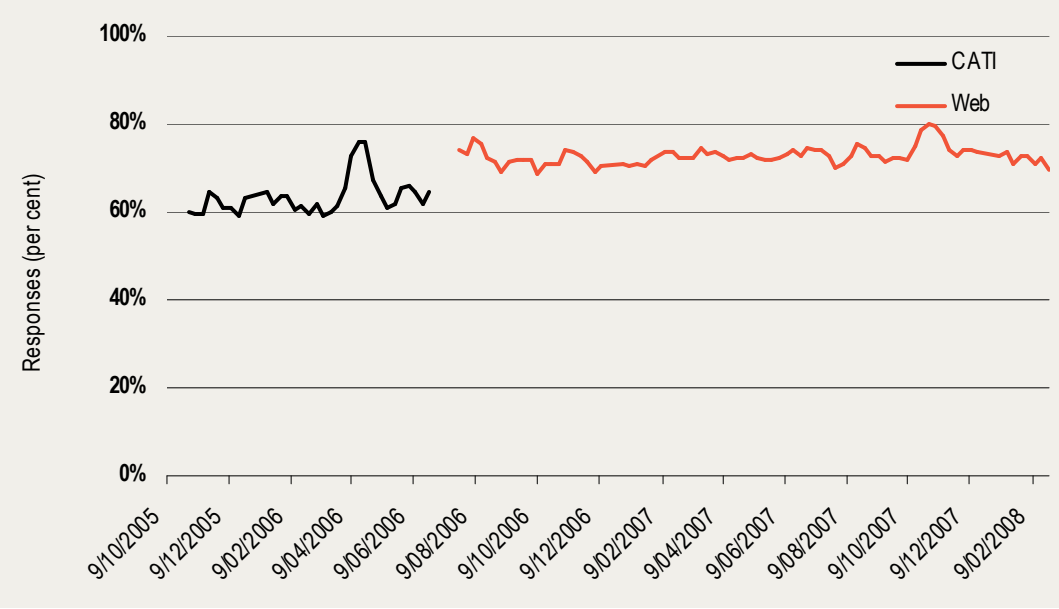
That said, the two sources do not appear to contradict one another. The proportion of mothers limiting consumption in 2005 (38 per cent) was well below its 2001 level of 57 per cent. From 2006 this trend has remained relatively flat. In fact, for this series we *were* able to identify a statistically significant trend in the data. This trend was positive — indicating that the number of consumers who are limiting their consumption has been marginally increasing since mid 2006. Although this trend is very minor, it is nonetheless significant and contrary to MLA's ultimate objectives.

4.18 **A diet including red meat is more important for my health than I previously believed**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

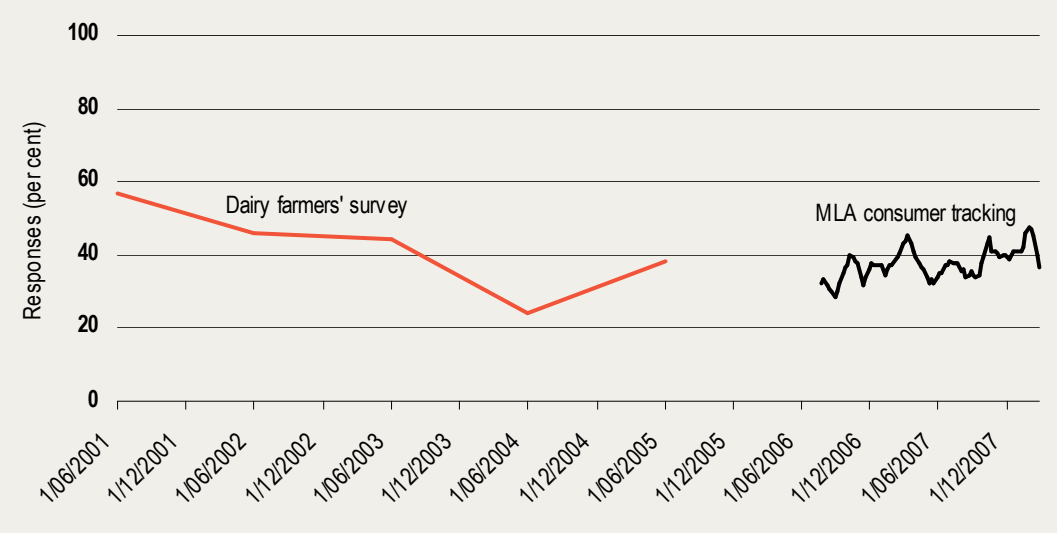
4.19 **Red meat is essential for a healthy mind**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

On balance, there is little evidence that overall consumer perceptions about the nutritional qualities of red meat improved over the 2004–2008 period with the exception of consumers who actively limit their consumption. This is perhaps not unexpected, as outlined in the previous section MLA's marketing activities (intensity and frequency) changed in late 2006. Our results here might just reflect that over this sample of data, MLA's activities have primarily supported high scoring attitudes.

4.20 **Limit consumption to avoid possible health problems**



Data source: MLA.

Additionally, it is important to recognise that we have an incomplete sample of consumer tracking data. Data on the first two years of the campaign is missing from this analysis – and this may indeed have been where MLA was able to make the most inroads with their target audience. An analysis conducted by The Leading Edge (TLE) in 2002 did suggest just that. TLE tested for changes in consumer attitudes towards red meat between 'waves' preceding and subsequent to the campaign. For indicators such as a consumer's disposition to red meat, and in several of the KPIs, TLE were able to show a statistically significant increase from the 'pre wave' to the 'post wave.'

Unfortunately however, this data is not collected over a time frame sufficient enough to gauge the longer run impact of the campaign (the TLE analysis providing just four data points over a 5 month period). It is unclear from this analysis how much of the positive increase in consumer attitudes represents a structural shift in consumer preferences, and how much is attributable to 'noise' external to the campaign.

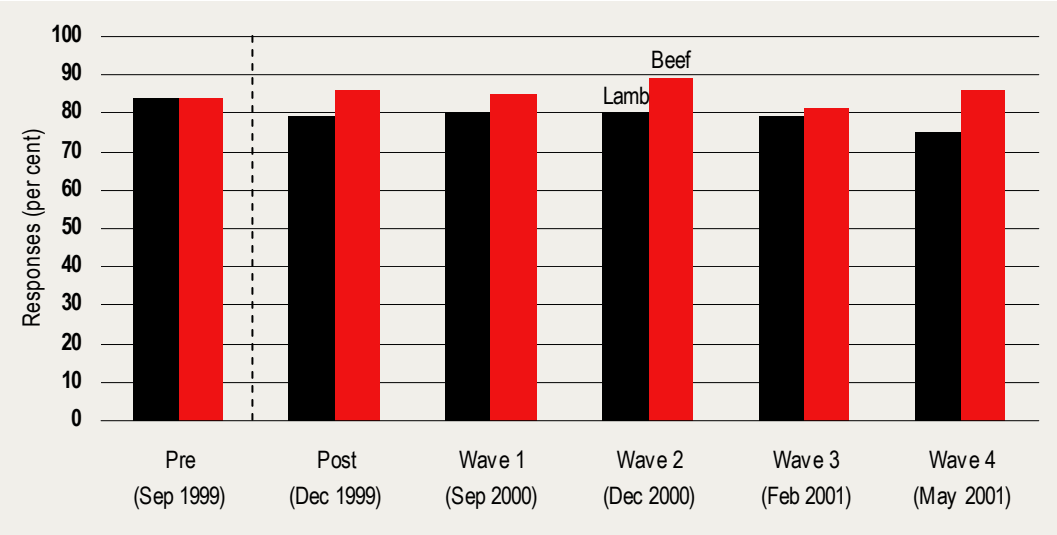
In any case, the conclusions above still remain relevant for the period 2004-2008.

Imagery

The second key message of the campaign sought to position red meat as a source of vitality and well being and to capture the joy of living (MLA 2007a).

We are fortunate to have as a reference point attitudinal data collected by MLA through face to face interviews over 1999–2001. This data was collected to measure the direct impact of a particular television campaign aired in late 1999. Chart 4.21 shows the proportion of consumers with a 'somewhat positive' or 'very positive' feeling about red meat. The survey was conducted prior to the commercials being aired, during the airing period, and at four intervals afterwards. Although there

4.21 **Positive disposition towards red meat 1999–2001**

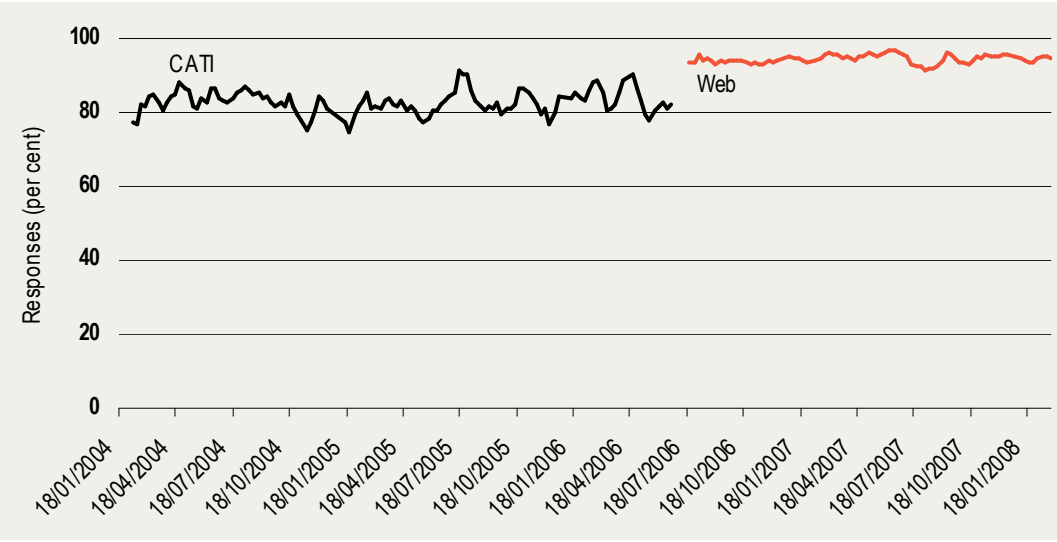


Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

appears to be some decay in attitudes towards lamb in this initial period, both lamb and beef still remain well regarded by consumers.

Consistently positive attitudes remain over the 2004–2008 period for which we have data as well (chart 4.22). Attitudes have shown no evidence of growth (or decline) over the 2004–2008 period (after accounting for the structural break in the data). Similar to the data in chart 4.12, the data began at such a high level that growth in this indicator might not be expected.

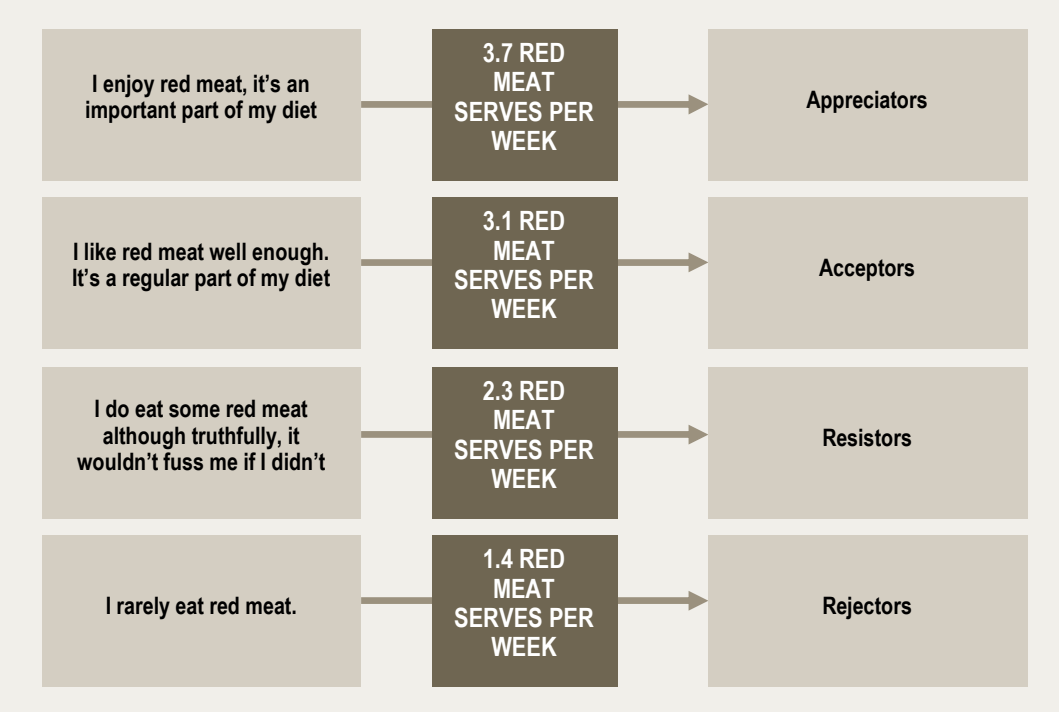
4.22 **Positive feelings towards red meat, 2004–08**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

Consumers were asked in the survey to identify with one of the four statements on the importance of red meat to their diet. On the basis of responses to these statements, consumers were respectively categorised either as an *appreciator*, an *acceptor*, a *resistor* or a *rejector* (chart 4.23).

4.23 **Consumer types: appreciators, acceptors, resistors and rejectors**

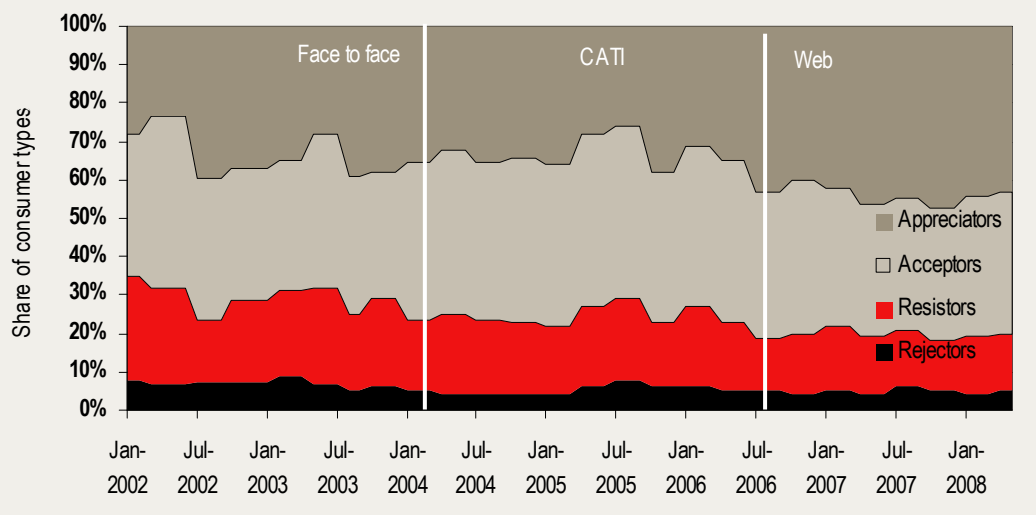


Source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

The less important consumers reported red meat being to their diet, the less they consume on average. Red meat *appreciators* on average consumed the most red meat per week, with an average over the sample of 3.7 serves. Appreciators and acceptors (who combined represented about between 70 and 80 per cent of consumers) consumed at the 'correct' rate each week (three to four serves). Resistors were around one meal a week below MLA's target band, while rejectors consumed well below the target. A KPI for MLA's Foundation Food campaign (from 2006 onwards) was to decrease the combined share for the resistor and rejector segments.

The data suggests that red meat became more important to consumer diets over the period. Chart 4.24 highlights the movement between these groups that occurred over the period. Over the four years to 2008 the number of consumers identifying with the statement 'I enjoy red meat, it's an important part of my diet' (appreciators) averaged at 38 per cent of consumers surveyed. Rejectors meanwhile averaged about 5 per cent. Both of these groups have remained relatively constant over the period (although appreciators have had experienced some significant swings). Table 4.25 accompanies chart 4.24 with greater detail.

4.24 **Consumer types over time**



Notes: The data above is obtained using three different survey methodologies. As survey methodology can influence an individual's response, the data in the chart above should not be viewed as a continuous series from January 2002 to February 2008. Rather, the chart reports three separate series (face to face, CATI and Web) for each consumer type (appreciator, acceptor, resistor and rejector). A greater discussion of this point is provided in box 4.7

The data does seem to suggest that across the four categories, the share of resistors and rejectors was falling while the share of appreciators and acceptors was increasing. However, when we tested the statistical significance of a time trend, no series was able to report a statistically significant trend. This again implies each of the series remained constant over the period — including the proportion of resistors and acceptors.

Reported consumption

There are significant difficulties in measuring shifts in consumer preferences and attitudes using the indicators based on relative value statements. Self-reported consumption might serve as an alternative measure on shifting preferences, and avoid the pitfalls associated with 'judgement indicators'.

Consumer tracking surveys asked consumers how many red meat 'meals [they had] eaten in [their] household in the last 7 days'. This is *self-reported* data, which relies on consumers remembering their past activities. Because data is not married to *actual* purchases, self-reported data is often thought to have a wide margin error margin.

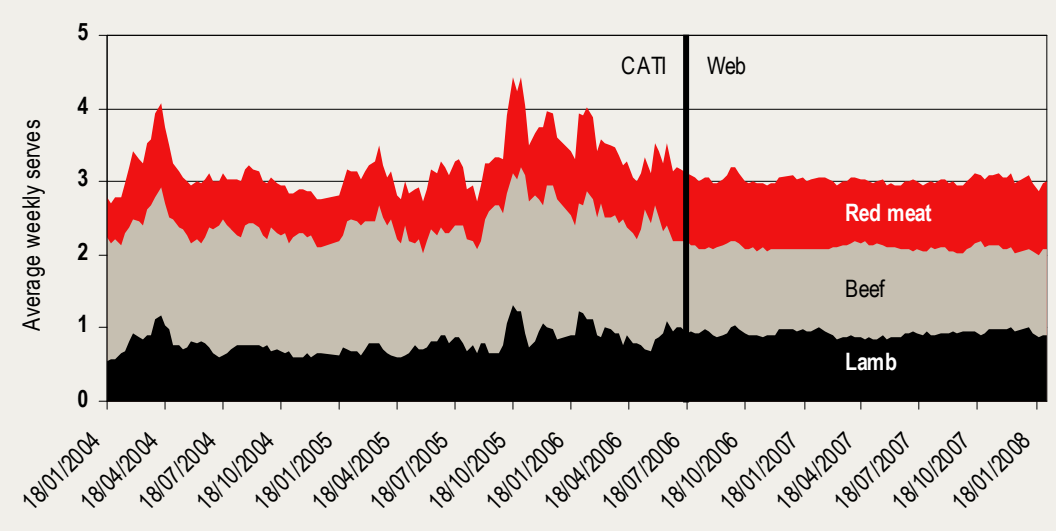
The samples have consistently returned a response of about three meals since tracking began (chart 4.26) — with the exception of some high results between October 2005 and July 2006. Most red meat consumed in the household is beef — exceeding lamb servings by a factor of two. The web data reports a noticeably higher quantity of lamb than did the CATI data in earlier part of the sample.

4.25 **Consumer types, descriptive statistics**

Detail	*Appreciators*	*Acceptors*	*Resistors*	*Rejecters*
2004				
Average share	0.34	0.42	0.20	0.04
Minimum	0.31	0.38	0.16	0.02
Maximum	0.38	0.47	0.23	0.06
Reported serves	3.72	3.13	2.35	1.84
2005				
Average share	0.33	0.42	0.19	0.06
Minimum	0.23	0.35	0.13	0.01
Maximum	0.41	0.50	0.25	0.09
Reported serves	4.14	3.24	2.33	1.14
2006				
Average share	0.37	0.41	0.17	0.05
Minimum	0.25	0.35	0.12	0.03
Maximum	0.46	0.48	0.24	0.07
Reported serves	3.70	3.30	2.40	1.40
2007				
Average share	0.45	0.35	0.15	0.05
Minimum	0.41	0.30	0.13	0.03
Maximum	0.49	0.38	0.21	0.07
Reported serves	3.49	3.00	2.23	1.38
2008				
Average share	0.44	0.39	0.13	0.05
Minimum	0.43	0.37	0.12	0.04
Maximum	0.44	0.41	0.14	0.05
Reported serves	3.52	3.01	2.16	1.47
CATI				
Average share	0.34	0.42	0.19	0.05
Minimum	0.23	0.35	0.13	0.01
Maximum	0.44	0.50	0.25	0.09
Reported serves	3.87	3.21	2.36	1.45
Web				
Average share	0.44	0.36	0.15	0.05
Minimum	0.37	0.30	0.12	0.03
Maximum	0.49	0.43	0.21	0.07
Reported serves	3.58	3.09	2.26	1.41
Total sample				
Average share	0.38	0.40	0.17	0.05
Minimum	0.23	0.30	0.12	0.01
Maximum	0.49	0.50	0.25	0.09
Reported serves	3.68	3.14	2.31	1.40

Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

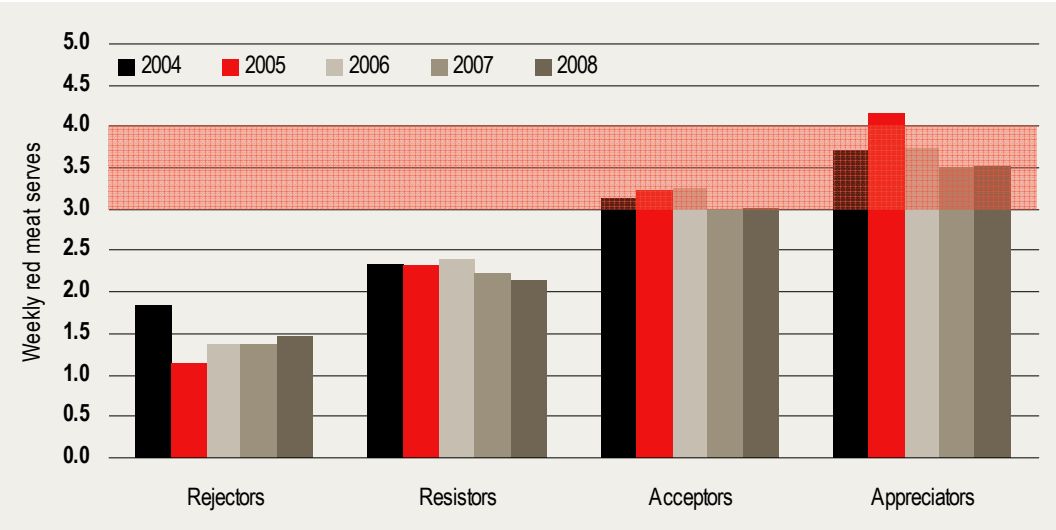
4.26 **Average servings of red meat in the last seven days**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

We previously outlined that there existed no evidence of red meat increasing significantly in importance to consumer diets (chart 4.24). As well as there being little movement *between* consumer groups, there was also little movement *within* consumer groups — in terms of self-reported data (chart 4.27). Between 2004 and 2008 only appreciators showed any evidence of a shift in consumption behaviour — and this was generally downwards from an average of 4.1 serves per week in 2005 to 3.5 serves in 2008. There has been little change in the consumption patterns of the more moderate groups — resistors and acceptors — whom have begun to consume marginally less over the period. Both appreciators and acceptors remained within MLA's target consumption band over the entire period.

4.27 **Consumer types and average consumption**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

Table 4.28 summarises how self-reported red meat servings are distributed by consumer type for each of the tracking samples and the entire series. This table shows the number of serves consumed by the typical consumer at quarterly percentiles. That is, if consumers were ordered according to their red meat consumption (from least to most), the table reports consumption of the consumer standing at the one quarter mark, halfway, the three quarter mark and at the end of the line. For example, an acceptor at the middle of the CATI sample would consume 1.9 serves of red meat per week. Another way to interpret this statistic would be to say that 50 per cent of Acceptors in the CATI sample consumed less than or equal to 1.9 serves of red meat per week. The 50th percentile column can also be interpreted as the median level of consumption for each sample.

4.28 **Consumer types — distribution of servings**

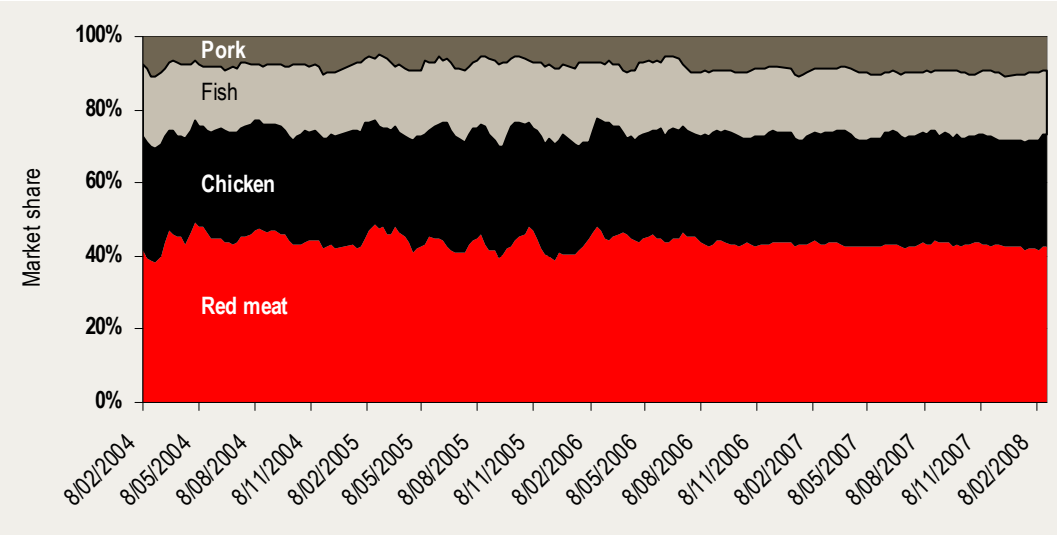
	25th percentile	*50th percentile*	*75th percentile*	*100th percentile*
CATI				
Rejectors	0.5	1	1.4	1.9
Resistors	0.7	1.4	2.1	2.8
Acceptors	0.9	1.9	2.8	3.7
Appreciators	1.1	2.2	3.2	4.3
Web				
Rejectors	0.4	0.8	1.3	1.7
Resistors	0.6	1.2	1.9	2.5
Acceptors	0.8	1.5	2.7	3.0
Appreciators	0.9	1.8	2.7	3.6
Total sample				
Rejectors	0.4	0.8	1.3	1.7
Resistors	0.7	1.3	2.0	1.7
Acceptors	0.8	1.7	2.5	3.4
Appreciators	1.0	1.9	2.9	3.8

Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

Consumption of red meat is a function of many factors — not the least of which is its price. Red meat prices over the period have risen substantially, and this would provide a natural tempering on any increase in demand. As prices rise, consumers may choose to simply either forgo consumption or substitute towards other similar products.

Consumers in the red meat market appear willing to absorb the significant increase in price — and have even increased their overall expenditure. We can see further evidence of red meat's resilience to rising prices using self-reported consumption for all meats. The shares consumers self-reported meat consumption are reported in chart 4.29. We can see that rising prices have not led consumers to substitute to alternative meat products such as chicken, pork or fish. In fact, the shares of red meat, chicken, fish and pork within a consumer's diet have all held relatively

4.29 **Shares by meat type from market research**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

constant over the period. But based on the survey data, we also don't know what has happened to the price of red meat relative to competing meats. Importantly, we also don't know what has happened to actual consumption quantities and expenditure on red meat. We only have information on number of serves.

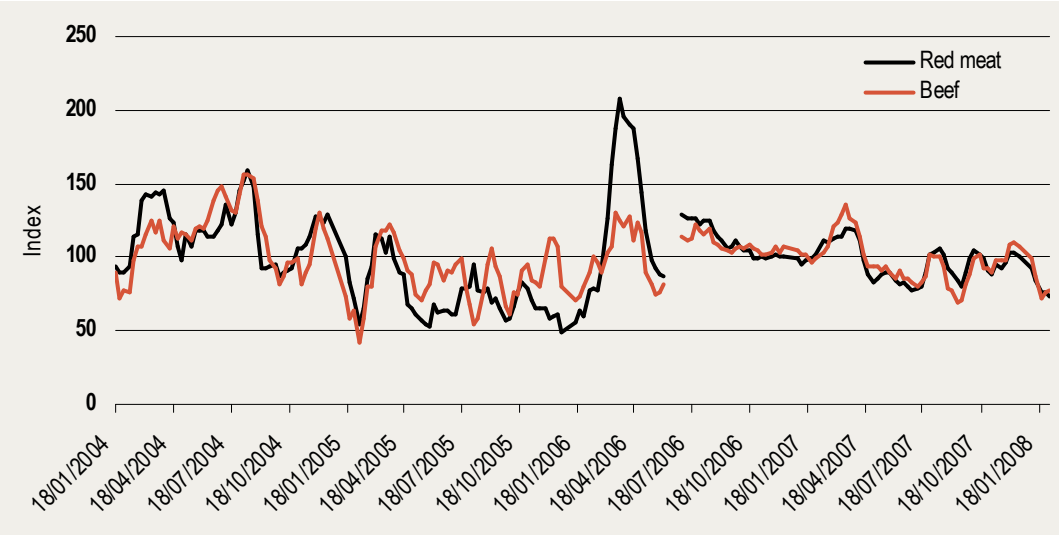
It is a worthwhile exercise to divide the data set into two populations — those that can and cannot recall viewing a red meat commercial — in an attempt to gauge the impact of the consumer campaign.

The volume and intensity of MLA's marketing activities has fluctuated since 2002. It is difficult however, to judge the precise quantum of MLA outputs that this red meat the campaign has produced. The effectiveness of a television commercial will be determined by a range of factors including content, length, scheduling and length of the campaign. This means that one television commercial may have more or less impact than another. Likewise, it is difficult to quantify the effect of the interaction and complementarity produced by supporting promotional materials.

We use consumer tracking data collected by the MLA as a proxy measure for the extent of MLA marketing activity. Consumers were surveyed by MLA through computer aided telephone interviews (CATI) and an online survey between January 2004 and February 2008. MLA's activities began 2 years prior to this, and during this period invested heavily into this campaign.

The proportion of consumers that had 'seen, read or heard anything' about 'red meat in general' or 'beef' is plotted in chart 4.30. Note that in mid-2006 there was a change in the survey methodology. This difference means that the data before June 2006 and after June 2006 are not directly comparable. Nevertheless, we are still able to draw some valuable insight from this series. We have indexed the data in chart 4.30 to the

4.30 **Consumer recall**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

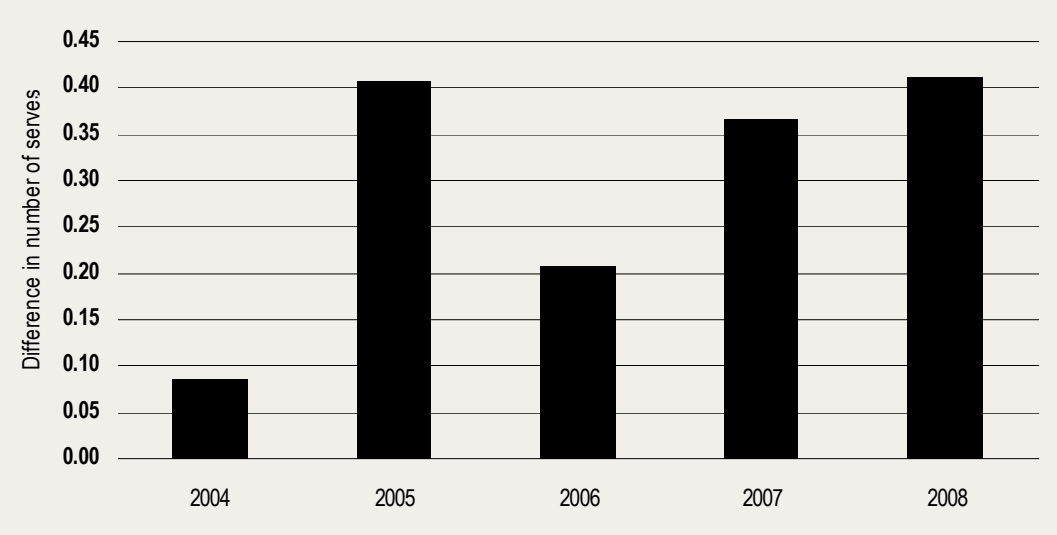
mean scores of each sample. When the series is greater than 100, consumer recall is above the series mean and below if otherwise.

The data in chart 4.30 largely mirrors the intensity of MLA marketing activities. We can see that there is a period of decay from initial recall levels (not shown) until mid 2005. From mid to late 2005 MLA increased their activities with the launch of the *Foundation Food* campaign — and this led to a sharp rise in consumer recall. After MLA changed the intensity and scope of its activities in 2006, consumer recall began to slow before maintaining itself throughout most of 2007 and into 2008.

Chart 4.31 shows the difference between the weekly serves of consumers who could recall that a red meat commercial and those who could not. Unlike the attitudinal data, the difference between the populations did not decline over time. On average those who could recall an advertisement would eat some 0.3 serves more a week than those who could not recall an advertisement.

However, it is important to note that some, if not most, of this difference could simply be a product of *recall bias* among those with a stronger preference for red meat. Moreover, while 0.3 serves is a substantial impact proportionally (about 10 per cent), it was not uncommon for weekly consumption to increase or decrease by twice this amount on a weekly basis. More than three quarters of the observations in the CATI sample lay within 10 per cent of the sample average.

4.31 **Difference in consumption between consumers who could and could not recall red meat advertising**



Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

Assessing the impact of MLA advertising

So far it has been difficult to identify any shift in consumer preferences in the aggregated data. This may be the product of a number of factors — including consumer exposure to MLA activities. To control for this we divided our population into those who could recall seeing an advertisement, and those that could not. Approximately 30 per cent of consumers could recall recently having 'seen, heard or read anything' about red meat in the CATI sample and 50 per cent on line.

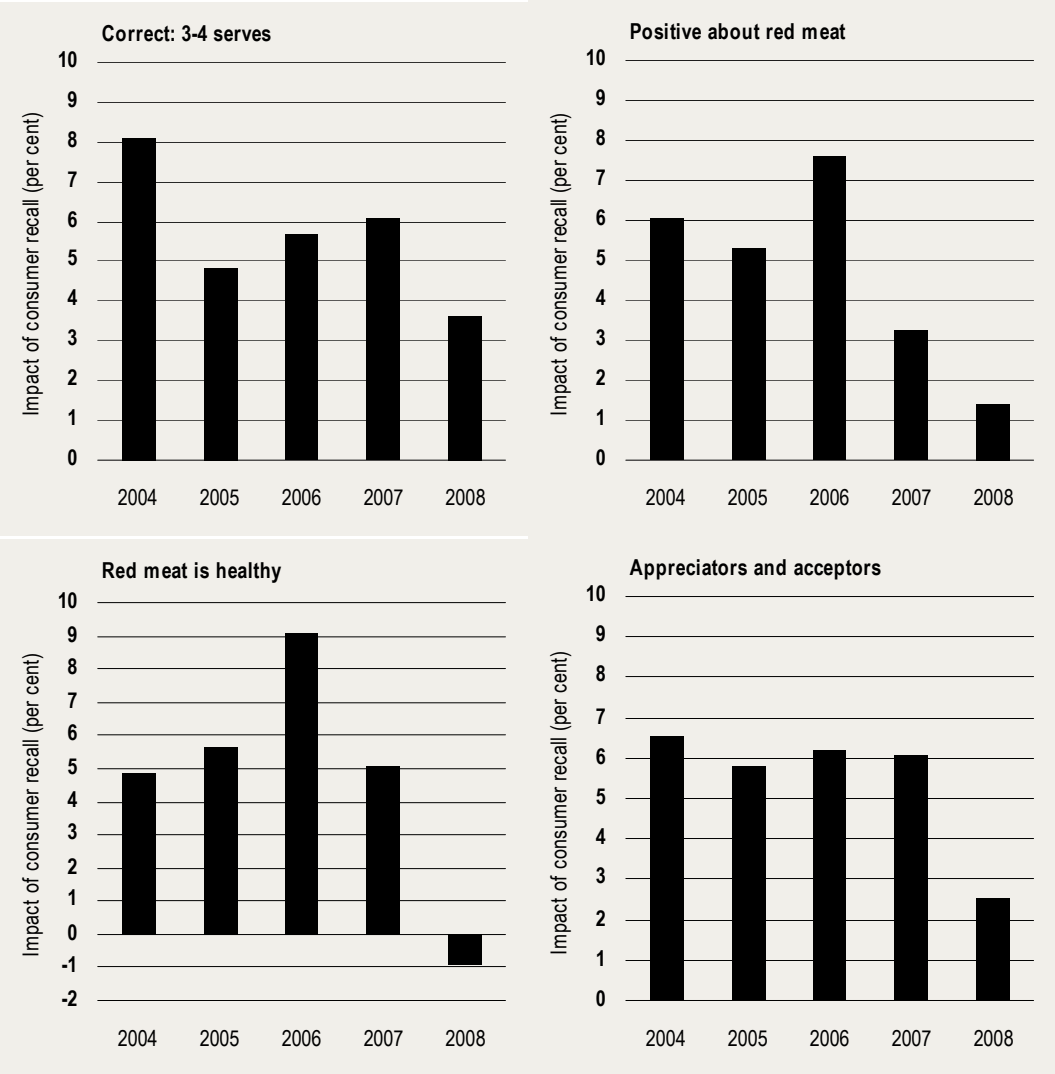
Caution must be used when making inferences about differences between populations. Those for whom red meat plays a large role in their diet are more likely to:

- respond positively to key attitudinal indicators
- recall advertisements and/or media stories about red meat.

Consequently, we can expect a high degree of correlation between advertising recall and positive attitudes from the outset.

Chart 4.32 shows the differences between those who could recall viewing a commercial and those that could not for some key indicators. This chart reports the marginal difference between the two populations. For example, in 2004 the number of consumers who correctly identified the 'three to four serves per week' message was some 8 percentage points higher among those that could recall the advertisement.

4.32 **Marginal impact of consumer recall**



Note: The charts above report the difference between the proportions of consumers who 'could' and 'could not 'recall red meat recently featuring in media. The results are calculated by subtracting the proportion of consumers who 'could not' recall the advertisement and fell into the above categories (ie they a) could correctly identify the three to four serves message; b) thought positively about red meat; c) thought red meat was healthy; or d) were classified as either an A*ppreciator* or as an *Acceptor)* from those consumers fell into the above categories that 'could' recall.

Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

We can draw two key conclusions from this data:

- those who can recall red meat in the media consistently report a more favourable message than those who cannot; and
- over time the observed difference between the two populations has largely declined.

That is, MLA's advertising has had a positive impact on consumers, but this impact has diminished over the period. We note that MLA marketing activities had reduced substantially from their peak during the period 2002–2004.

The 'zero trend' in most of the indicators above may in fact be evidence of the campaign being highly influential, as the baseline remains unclear. In the absence of the nutrition campaign, it could have been the case that attitudes may have declined — and what we have witnessed is the success of the campaign in maintaining consumer red meat's status over the period.

In addition, a major drawback of the consumer tracking survey is that the values of data collected are discrete — not continuous. For example, a consumer may respond that that he or she feels 'positive' or 'very positive' to a question, but the survey's five categories place a natural cap on how much insight can really be ascertained. What we would like to know is: exactly *how* positive is the respondent, but instead we have little else than a set of binary indicators.

Nonetheless, binary indicators can still provide useful information about relationships between two variables. Using a *probit estimation model* we can establish the probability of an event occurring (such as a consumer having a positive feeling about red meat) given that the consumer exhibits some characteristic (such as being able to recall red meat advertising).

We conducted probit estimations to test for a relationship between advertising recall and consumer responses:

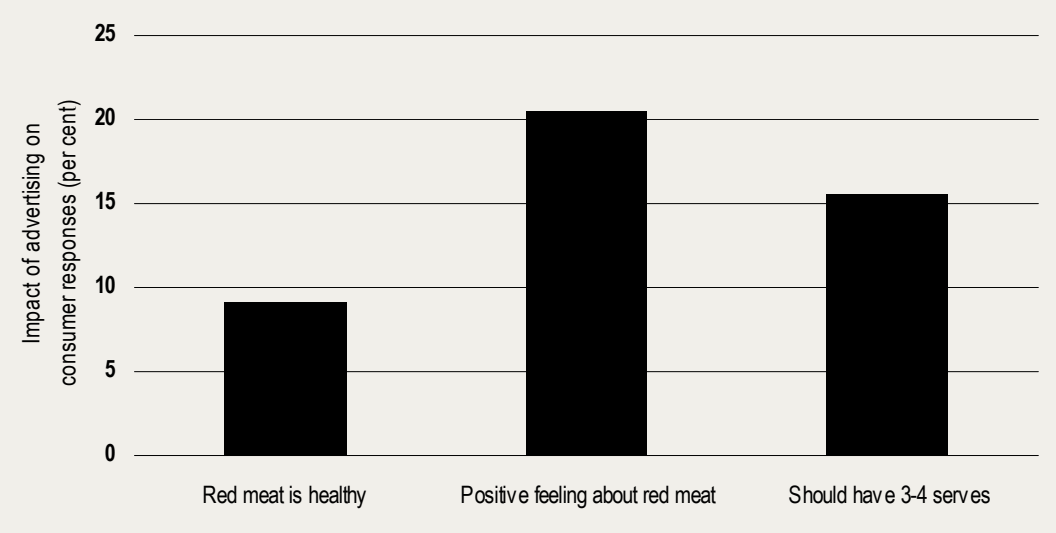
- The probability that a consumer feels 'somewhat positive' or 'very positive' about red meat, given that a consumer is or is not able to recall recently seeing an advertisement about 'red meat in general';
- The probability that a consumer regards red meat either 'somewhat healthy' or 'very healthy', given that a consumer is or is not able to recall recently seeing an advertisement about 'red meat in general'; and
- The probability that a consumer is able to correctly identify three to four serves of red meat per week as a healthy target, given that a consumer is or is not able to recall recently seeing an advertisement about 'red meat in general'.

Our probit estimations used the consumer tracking data for the period January 2004 to June 2006. This data set was the most consistent and tangible for our purposes. Also, the 6 500 observations provided enough data points to identify a relationship while avoiding the (structural break) problems of the change in survey technique. The impact of the advertising campaign will be evident if probit estimations are able to identify statistically significant relationships between viewing advertisements and the likelihood of a positive response.

Although there were generally no observable trends in the data, the probit estimations revealed that advertising does appear to have a positive effect on preferences. Statistically significant relationships were found in all three estimations. A consumer who could recall viewing a red meat advertisement has a higher probability of feeling positive about red meat; regarding red met as healthy; and identifying three to four serves as a target for a nutritious diet.

Chart 4.33 shows the increase in the likelihood of responding positively to these three indicators for those consumers who can and cannot recall the advertisement. For example the probability that consumer has 'positive' feelings towards red meat is 21 per cent higher if that consumer can recall seeing an advertisement. However, again, caution should be used when interpreting these results as recall bias is likely to be a major factor that we are unable to account for.

4.33 **Impact of red meat advertising on consumer responses: increase in probability of observing consumer response**



Note: This chart reports the estimated coefficients on the three Probit estimations we conducted. The Probit estimations too the form: Pr(y=1)=f(consumer recall); where y can be substituted for each of the indicators above, and is equal to 1 if a consumer identified with the statement.

Data source: MLA commissioned market research by TLE (CATI) and Millward Brown (Web).

5 *Identifying and evaluating impacts*

This chapter focuses on assessing the impacts of the nutrition program by attempting to draw the link between changes in consumer and industry behaviour and desired program outcomes such as increased purchases, profitability or reduced health risks.

Role of promotion

Promotion forms a core part of most company and industry activities. Box 5.1 provides a brief description of two broad approaches to advertising. Advertising acts as an 'insurance policy' helping to moderate exposure to risk. The importance of promotional activities varies largely in response to the nature, scope and scale of the potential risks.

The risks for food industries cover a broad spectrum from simply maintaining product awareness (by reminding people about what they already know) to providing timely and credible information in response to adverse changes in perceptions by consumer in the market place. As we have noted in this report, these threats come from a number of sources and require a portfolio approach.

Most of the evidence from the literature suggests that advertising does have a positive pay off. However, the magnitude of this pay off is difficult to estimate. Despite an abundant number of studies, evaluating the return on advertising investment tends to be more qualitative than quantitative and context specific.

Evaluating the benefits of generic promotion

Generic advertising refers to promotion of generic or homogeneous products typified by many agricultural commodities. Product differentiation and private branding is very difficult because these commodities are:

- produced by a large number of relatively small enterprises; and
- often transported and distributed in bulk through centralised facilities (for example, bulk handling and export of grains).

This type of advertising is associated with industry-wide initiatives funded through levies. Industry bodies engage in generic advertising for a number of reasons. They

5.1 Two types of advertising

There are two types of advertising: *informational*, also known as constructive advertising and *image*, which also called defensive advertising. The first delivers additional information to buyers about product attributes, advantages and prices. Once consumers have more information to make decisions they respond more to price differences. Some literature suggests that is most frequently adopted by low-cost and high-quality product industries which are already competitive and appreciated by buyers. Image advertising is for products and services that are already known by the consumer and focuses on building or maintaining brand loyalty. Alternatively, when consumers become loyal to a brand or product price becomes less important. It is often associated with industries facing an unfavourable image in the market.

Both types of advertising should increase demanded quantities but the impact on prices could be different. Informative advertising may lead to lower prices, through providing more choice and greater competition but persuasive should result in at least in the maintenance of the pricing structure. However, if the price of the product is set by the international market, only insignificant changes in domestic market prices would result whatever the type of promotion used.

Comparison of informational and image advertising

	Informational	*Image*
Purpose	▪ Provides information to consumers about product attributes and advantages. ▪ Vehicle for dealing with threats or adverse perceptions of consumers	▪ Builds brand loyalty through positive images by association with wellbeing, pleasant experiences or attractive people.
Effects on customer's response to prices.	▪ Increases responsiveness to differences in attributes, including price, between products.	▪ Reduces price responsiveness after loyalty to a brand has been established.
Effect on the price of the product	▪ May lower prices due to greater competition between products within an industry especially in the presence of economies of scale.	▪ Maintains prices higher than otherwise the case due to loyalty and consumer preferences.
Impact on entry to industry	▪ Facilitates entry of other firms to the industry. ▪ Consumers are better able to compare and choose new products based on the information available.	▪ Discourages entry of other firms as consumers have less incentive to try new products due to their loyalty to the advertised product.
Effect on market	▪ More competitive; price and quality of products is well known by buyers and competitors. ▪ Forces firms to compete based on high-quality, low-cost products.	▪ Can lead to more concentrated market structures due to scale economies in advertising campaigns.

Source: The CIE based on *The Economics of Advertising*. Bagwell, K. 2001.

can provide economies of scale, aggregating resources across a large number of small levy payers. It allows them to pool funds that enable more ambitious promotion programs that individual farms would not be able to launch by themselves. Generic advertising (if effective) benefits all members of an industry. Funding such activities through a levy overcomes the 'public' good aspect of generic funding, thereby avoiding the free rider problem.

The evidence quantifying the payback to generic advertising is limited to a small number of examples (see box 5.2). In these studies, the short term effects can typically be observed with reasonable confidence. However, generic marketing often serves also as a long term investment strategy where the payoffs are significantly more difficult to quantify.

5.2 Positive returns from generic promotion

Several studies about agricultural and manufacturing generic product advertising have been done over the past decade. An evaluation made by Varian (2006) estimates that additional $3-$6 is gained per each dollar invested on advertising agricultural products in the United States.

Freebairn et al (2005), using data for a number of agricultural products in Australia, found that generic campaigns can be profitable for producers. This gain, however, is modest, especially in cases where the internationally traded product differs from the domestic product, the net effect of advertising was positive but not major.

An older study by Ball and Dewbre (1989) also conclude modest, but positive returns, from generic advertising. They found that an additional 1 per cent increase in promotion expenditure yielded an 0.04 per cent increase in beef demand and a 0.03 per cent increase in pork demand. The study also noted that increasing the demand for one product (due to advertising) resulted in a decline in demand for the other. This finding suggests that determining an appropriate level of investment in promotion requires careful consideration of activities by competing products.

Ward (2004) estimates the return to producers from the US Beef Check-off Program which undertook generic advertising funded through a levy. The study uses an extensive amount of detailed data (capturing at the household level servings and purchase price and industry beef sales). Ward estimates that a dollar spent on generic promotion generated a return for producers of around $5.60.

Most case studies of successful generic advertising demonstrate a positive relationship between marketing expenses and sales can be (that is, correlation). Methodologically, there are doubts about the specification of the econometric models

used in these studies and their estimation procedures - as highlighted by Freebairn et al (2005). In addition, these studies also took a wider perspective of what constituted promotional activities than this evaluation.

The limitations of the evidence highlighted in these studies are similar to this evaluation. Available data is often inadequate and too costly to collect. A robust analysis requires continuous data that explicitly captures consumer behaviour changes, as well as explain possible confounding factors (for example, changes in relative prices, consumer income, preferences and other elements involved). The study by Ward (2004) is 'best practice' because of access to detailed time-series data on consumer attitudes, number of serves and importantly sales. Relatively large promotion budgets and assistance in data collection from the USDA have contributed to the construction and maintenance of the database.

The baseline

In terms of the nutrition program, while we can observe trends in key indicators over time, the precise effect the campaign has had can be measured only against what we would have observed in the absence of the program (the baseline). Throughout the 2004 to 2008 period red meat has maintained a relatively strong public image. Most indicators showed no statistically significant change between 2004 and 2008.

Understanding the risks that an industry faces can play an important role in constructing a baseline. Consider the following possible scenarios, for what *could* have been observed in the absence of MLA's campaign:

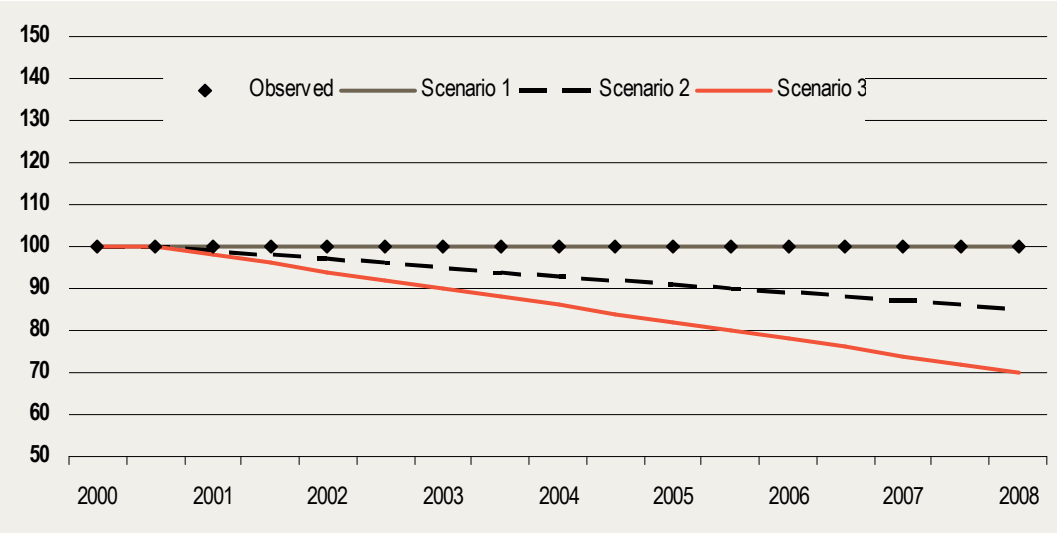
- **Scenario 1:** We may have observed general attitudes towards red meat near identical to what we observed in the face of the campaign.
- **Scenario 2:** We may have observed a marginal decline in key indicators of attitudes about red meat.
- **Scenario 3:** We may have observed a significant decline in key indicators of attitudes about red meat.

These three scenarios are illustrated in chart 5.3. The chart depicts observations about a hypothetical KPI and the alternative scenarios described above. This chart illustrates that maintaining attitudes — as opposed to improving them — can indeed be evidence of the campaign's success, depending on the alternative case.

One of the constraints identified in chapter 4 is that the supporting dataset behind the program KPIs does not currently have the structure or a sufficient time-series to establish that baseline with any certainty.

Without this data, making a hypothesis about the 'without' case is a difficult task. Sometimes we can extract the baseline using data collected from a control population that is unexposed to a given 'shock'. More specifically, MLA's consumer tracking data has no control population for which we can establish a credible alternative.

5.3 Potential baselines



Data source: CIE.

Instead we can look at the environment in which the campaign was run. A number of negative 'shocks' were imposed onto the market for red meat, most notably:

- the outbreak of Bovine Spongiform Encephalopathy (BSE) in the UK in early 2001;
- growing concerns about obesity;
- animal welfare and environmental issues; and
- the release of a global diet, lifestyle and cancer report with a strong cautionary message to limit red meat intake to prevent cancer.

A proportion of MLA's expenditure on this nutrition campaign was allocated to issues (or risk) management along these lines. In the absence of the campaign, clearly these 'issues' would have been left unchecked — potentially harming red meat's public image.

In addition, red meat faces significant competition for market share from other meats (such as pork and chicken) and other food sources. In the absence of MLA spending on marketing, it is likely that these meats would continue to spend on advertising. Depending on the effectiveness of this advertising, it is possible that this could result in a decreased market share for red meat.

To some extent, the aggressiveness of the marketing practices of red meat's competitor may indeed be a function of red meat's own expenditure. That is, the nutrition campaign may have induced advertising competitors to undertake campaigns of their own. This phenomenon is not uncommon, however given the degree of competition in the market for food however, we do not expect that the MLA's campaign alone to have had a significant inducement effect across food marketing. However, it is possible that the size of the red meat industry could have induced marketing amongst its direct competitors, in particular pork and chicken.

Not all shocks to this market have been negative. MLA recognises two significant events which had the potential to *favourably* influence the market — independent of MLA nutrition activities. These include:

- the release of *Dr Atkins' New Diet Revolution* (2002) which promoted a high protein diet; and
- the release of the CSIRO's *Total Wellbeing Diet* (2005) which provided evidenced based dietary recommendations, including three to four serves of red meat per week.

Market testing commissioned by MLA has indicated that both of these events had little impact on overall red meat attitudes. Market analysis on the 'Atkins diet' indicated that consumers focused more on reducing the carbohydrate intake than increasing their daily protein intake.

Unfortunately, the MLA tracking data does not allow us to effectively measure and define the baseline for its key measures. The fundamental problem is that there is no mechanism for isolating the effects of the program on attitudinal measures in the tracking data that is available. What would be needed is a way of effectively establishing a 'baseline' (baseline) for consumer attitudes that measures (over time) consumer attitudes for those exposed to a program/campaign and those not exposed.

Impacts

There are two broad areas where we would expect to see impacts resulting from MLA's nutrition program:

- growth in consumer demand for red meat
- public health benefits due to increased consumption of red meat.

The previous chapter found that in general, the key attitudinal and behavioural measures tracked by MLA in relation to the nutrition program have been largely flat. This includes the self-reported data on the number of red meat serves. As the previous section outlined, it is still possible that the nutrition program had an impact, but we don't know anything about the baseline — what would have happened without the program.

Aside from not knowing the baseline, the other major issue in terms of measuring the impact on demand is the lack of tracking data relating to key consumption measures — particularly consumption quantities and expenditure on red meat. As noted, the tracking data collects self-reported data on the number of red meat *serves;* however this is not sufficient to draw any conclusions on demand for red meat.

Despite these issues, it is clear that demand for red meat has increased over the period the nutrition program has been running. During the six years (2002 to

present) over which MLA has run its campaign, demand for red meat has been increasing. MLA's demand index estimates that both lamb and beef demand have increased by 21.5 per cent over this period. MLA estimates of domestic consumer expenditure on red meat have increased from $6.4 billion in 2001-02 to $8.6 billion in 2006-07 — an increase of $2.2 billion or around 33 per cent.

At this point however, there is not sufficient evidence to confidently attribute this to the nutrition program. A range of other factors, including product innovation and improvements in eating quality, also occurred during this period. It is likely that the nutrition campaign was a contributor to observed demand improvements, but it is not possible to estimate the size of the impact. The most significant constraint in identifying the contribution of the nutrition campaign is to recognise the fact that maintenance of domestic red meat consumption is the result of a range of concerted activities. These include the contribution of other MLA programs (all the subject of separate evaluations) including:

- eating quality
- food safety
- domestic lamb promotion
- red meat innovation.

In addition, there have been a range of developments within industry that have contributed to the improved performance of the red meat sector:

- increased product consistency from lot feeding and lamb producers
- restructuring within the beef and lamb marketing chain and product innovation
- improved performance of speciality retail (butchers).

Separating out the relative contribution would prove very difficult, but it is clear that the nutrition program cannot claim the entire benefit.

Evaluating public health benefits

The program's logic identifies a range of positive outcomes and impact beyond changes in consumption. Given the campaign's focus on nutrition, among these desired outcomes is improved public health. This outcome represents an important spillover benefit that would flow outside of the red meat industry. Quantification of this benefit is very important given that the government and taxpayers are also stakeholders in the Nutrition program.

The MLA health research considered the interaction between consumption of red meat and the risk of a number of health effects. Some of the health effects are quite serious, such as bowel cancer, heart disease and obesity. Reducing the risk or prevalence of these effects (mortality as well as significant morbidity) can generate substantial benefits. These benefits arise from a range of sources including avoided

treatment costs, improved quality of life, minimisation of adverse impacts on carers and family and avoided work loss days. [3] Benefits from more minor conditions, such as acne, can also be measured using avoided treatment or expenditure based measures.

Conceptually, mapping the link between nutritional awareness and public health benefits is relatively straightforward. However, measuring the linkages and impact is not. Measuring public health benefits requires:

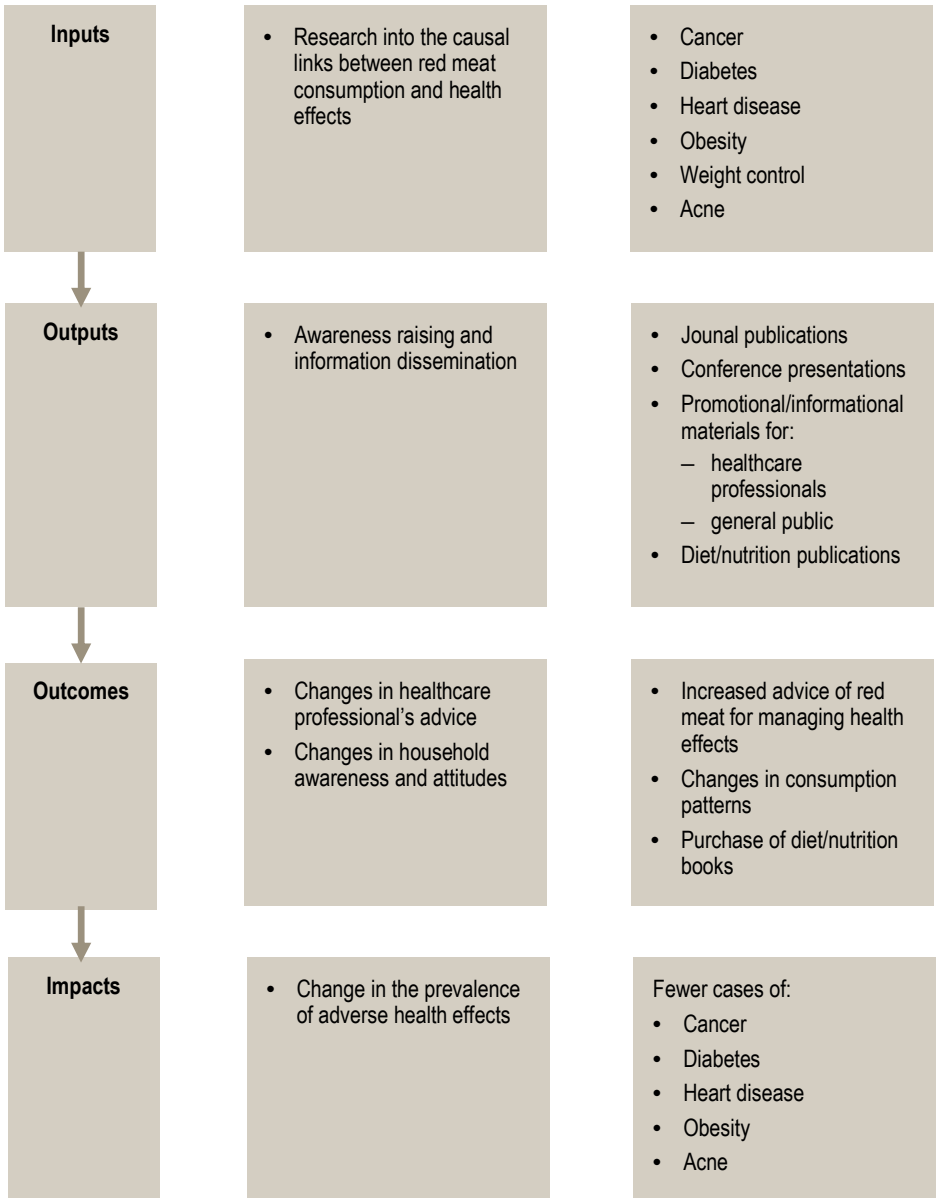
- observing changes in the prevalence of specific health effect;
- discerning the extent to which observed changes are due to red meat consumption relative to a significant range of other confounding factors;
- extrapolating observed changes to the general population; and
- applying monetary estimates to the specific health improvements.

Chart 5.4 illustrates how public health benefits could arise from MLA's activities. It highlights the complexity of linking investment in red meat nutritional research to actual changes in public health. The chart also indicates that before public health attributes can be attributed to the nutrition campaign, changes in behaviour need to be observed. In other words, evidence of changes in red meat consumption patterns is essential. Moreover, the changes in consumption patterns need to be observed for relevant target populations over relevant time horizons.

Given there isn't evidence of increased red meat consumption directly attributable to the nutrition program, it is difficult to draw any conclusions about public health benefits. Although it is not possible to evaluate the direct public health benefits of the program, it is clear that it has contributed to increased knowledge through its approach to commissioning evidence based research. A highly publicised example of this is the CSIRO Total Wellbeing Diet. CSIRO claim that an estimated 547 200 Australians have lost weight following its recommendations as reported by MLA (2007c). Assuming the weight loss has been sustained, it should contribute to improvements related to a range of health conditions, including diabetes management and lower blood pressure (which in turn reduces the risk of heart disease). A share of these public health benefits could be attributed to MLA's investment based on MLA's contribution relative to the full suite of the TWD's R&D. Unfortunately there is not sufficient evidence to estimate the magnitude of these benefits.

[3] Alternatively, changes in mortality risk can be valued using willingness to pay estimates typically referred to the value of a statistical life (VSL or VOSL).

5.4 Linking investment to public health outcomes



Source: CIE.

Breakeven analysis using the integrated framework

A key conclusion of this evaluation was that the benefits from MLA's nutrition program are very difficult to quantify in dollar terms. Therefore, it is also difficult to estimate the payoffs to levy payers from funding the program.

The key linkage that cannot be quantified is between program outputs, current KPIs and the impact on total sales of red meat. To calculate benefits from the program, consumption or sales of red meat should be higher than would have otherwise been

the case. This higher level of consumption relative to the base could then be translated back into changes in producer's incomes. This increase in income would be then compared to the program costs to calculate the net benefits to producers.

Another perspective would be to ask the question: what would be the increase in domestic demand required to pay for the nutrition program by levy payers? This can be answered by this using the MLA's integrated framework. Features and capabilities of this framework are summarised in box 5.5. In order to undertake this analysis we need a set of assumptions, which are outlined below.

Key assumptions of the break-even analysis

The question is asked: what increase in per person consumption is required to cover the cost of the nutrition program? A number of assumptions are required to undertake the breakeven analysis concerning:

- which program expenditures should be included;
- what is the increase in consumer demand required - in terms of products and over what period; and
- how the payoffs are measured.

For this analysis, expenditures used amounts to $40.3 million in nominal terms from 2001-02 to 2006-07 — see table 5.6, which includes:

- those on health professionals communications, nutrition research, consumer campaign and issues management and government affairs; and
- only levy-payer funded expenditure (excluding matching funds by the Australian Government).

In terms of the increase in demand required, the analysis assumes that the payoffs from the nutrition program result from an equal increase in the demand for both beef and lamb consumption:

- as measured by percentage change in per person consumption from observed market outcomes; and
- this demand shift occurs across all segments that constitute domestic disappearance of red meat including retail, food service and use by manufacturing.

The change in demand is treated as one-off and lasts six years, from 2001 to 2007 only. This approach makes an implicit assumption regarding the lifespan of program benefits. However, there is a significant amount of uncertainty around the decay rate of the nutrition program:

5.5 Key features of the integrated framework

The GMI model provides a global representation of production, consumption, trade and prices at the bilateral level for meat (beef, sheepmeat, pigmeat and poultry) and live animals (cattle and sheep). It measures payoffs to Australian beef and sheepmeat producers in terms of changes in prices, production and gross value of production at an aggregate industry level. But the GMI model is purely a meat industry model and as such, it does not measure effects on other industries or the economy as a whole.

The integrated framework (IF) is a model of the Australian economy. It captures interactions between the red meat value chain and other sectors of the economy. These interactions include purchased input use at the farm level and value adding factors such as capital and labour. In terms of red meat sector coverage, the IF includes farm production, feedlots, processing, wholesaling, retailing, domestic consumption and exports. The IF measures the effect of changes on each industry (in terms of output, prices, net income etc.) and the economy as a whole (in terms of GDP, employment, consumption, trade balance etc.). The linked GMI/IF system then links the outcomes in specific global markets with details at the domestic industry level and broader economy.

This is a similar approach to the break-even analysis proposed for generic advertising campaigns proposed by Freebairn et al (2005). They propose a reduced-form equation for the minimum or break-even response from advertising. The increase in domestic sales due to advertising is function of:

- share of domestic and export sales;
- domestic and export own-price elasticity of demand; and
- the levy as a share of the domestic retail price.

The GMI/IF captures the essence of this reduced-form approach and enhances it with significant detail on:

- the composition of exports markets for each type of meat (GMI model); and
- interactions in the domestic market through consumption of each meat type and the supply response along the meat marketing chain (IF).

The representation of the different markets for Australian red meat - the domestic and individual markets – and how they are connected is at the core of the structure of the linked GMI/IF models. It recognises that - due to Australia's exposure to export markets – that Australian red meat prices are largely determined by prices in global markets and exchange rates. This has implications for how changes in domestic demands – as a result of promotion or other demand shifts – impact on volumes and prices. It also provides an ideal vehicle to conduct a break-even analysis.

5.6 **Nutrition program funded by levy payers: 2001-02 to 2006-07[a]**

Activity	*Total MLA funding*
	$000
2001-02	7 132
2002-03	5 931
2003-04	6 013
2004-05	6 468
2005-06	6 056
2006-07	8 690

[a] See table 5.3, total MLA funding across Nutrition program components.

Source: MLA.

- different program components would have different rates of decay if funding ceased; and
- these rates of decay would have to be weighted by the importance of each component in terms of funding.

The composition of outputs from the nutrition program suggests a range of time profiles between implementation and outputs or outcomes. The program targeted two types of audiences: the general household consumer and health professionals. The impact of the consumer campaign is thought to be rapid but so to the decay (that is, the effects do not much beyond the period over which MLA undertakes active advertising). At the same time, the impact of working with health professionals and underlying research is expected to have not only longer lead times but also substantially longer decay rates.

Taking a conservative approach, it is assumed that the benefits persist only over the same period as the expenditures. In other words, the decay rate of the entire program is less than one year – if the program were discontinued there would be no benefits in following years. By doing this we ask the question: what is the maximum shift in demand required to pay for the program? It therefore acts as an upper bound to the required breakeven point.

The benefit used in the breakeven analysis is defined as the value-added or income received at the farm or saleyard level by producers. This benefit is commensurate with producer's capacity to fund levies that fund the nutrition program.

A key assumption used here is that the cost of raising those levies is zero. If this was not the case, then more levy funds would have to be raised to fund the same program. Analysis presented in the Productivity Commission (2007) suggests the cost of raising a dollar of levy funds is between 20 and 33 cents — which is less than the cost of raising revenue through the tax system.

Results

The results of the breakeven analysis are summarised in table 5.7. This analysis indicates that over the period, a sustained increase in domestic demand for red meat

5.7 **Results of breakeven analysis using the Integrated Framework**

Increase in demand required	*Change in consumer demand required*	*Share of increase in demand*[a]	*Increase in retail sales*[b]
	%	%	$m
Beef and lamb			
▪ over six years	1.5	13.4	128
Sensitivity analysis			
Beef only			
▪ over six years	3.2	40.7	211
Beef and lamb			
▪ over nine years	1.4	12.4	119

[a] Increase in demand as reported by the MLA demand index. [b] Increase in value of retail sales in 2006-07 terms as reported by the MLA.

Note: The analysis discounts program costs and benefits to 2006-07 using a 5 per cent discount rate.

Source: Integrated Framework and CIE calculations.

of 1.5 per cent above what would have happened without the program would be needed to pay for the program. Because of the conservative nature of this analysis, this presents an *upper-bound* on the required increase in demand.

From the beginning of 2001-02 through to 2006-07, demand for red meat increased by around 11 per cent according to MLA's demand index. As identified earlier, this increase is the result of the concerted actions all MLA programs and industry initiatives. The breakeven analysis in table 5.7 suggests that the nutrition program would have had to contribute less than 15 per cent of the total estimated increase in demand to pay for itself.

This increase in demand required from the Nutrition program would translate into additional retail sales of red meat of $131 million each in 2006-07 terms. Over the 6 years of the program, this shift in demand would amount be equivalent to $665 million of increased expenditure at retail level for red meat. This cannot be compared

Sensitivity analysis

If the increase in demand required to fund the campaign is from an increase in demand for beef only, then the required increase rises to 3.2 per cent above what would have happened otherwise or around one-third of the increase in demand projected by the MLA demand index.

As already noted a key assumption made for the breakeven analysis is the rate of decay of program outcomes. Given the challenges of assessing the decay rate, benefits were assumed to flow over a longer period – 2001-02 to 2009-10 – which involves an additional three years.

Under this assumption, the increase in demand required over the nine years to cover program costs falls to 1.4 per cent. This implies that the results are not particularly sensitive to the number of years they are carried forward.

Conclusion

The analysis presented in this report suggests that there has been no deterioration of key attitudinal and behavioural measures over the past four years. Without the program, these measures could have declined as discussed earlier in this chapter. However, it is not possible to determine this with certainty with the data and information available. Demand for red meat has increased over the period of the campaign. On balance, it is likely that the nutrition marketing program has contributed to this increase; however it is not possible to say with any confidence what this contribution has been.

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