



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada



Evaluation of AAFC's Program Response to the BSE Crisis

Final Report

Office of Audit and Evaluation

March 2011

The AAFC Evaluation Committee recommended this evaluation report for approval by the Deputy Minister on February 21, 2011.

To obtain more information on the Office of Audit and Evaluation, please visit
http://www.agr.gc.ca/aud_eval

Permission to reproduce.
Select and insert appropriate permission to reproduce.

© Her Majesty the Queen in Right of Canada, 2011

Cat No.: A22-537/2011E-PDF
ISBN No.: 978-1-100-18587-3
AAFC: 11453E

Aussi offert en français sous le titre : Évaluation des programmes mis en œuvre par AAC pour faire face à la crise de l'ESB

Table of Contents

Executive Summary	iii
1. Introduction	1
1.1 Background	1
1.2 Evaluation Scope and Methodology	1
1.3 Evaluation Constraints / Risks	4
2. Program Profile	5
2.1 Context	5
2.2 Overview of Programs	6
2.3 Program Resources	9
3. Evaluation Findings	9
3.1 Relevance	9
3.2 Impacts / Success	14
3.3 Program Design and Delivery	21
3.4 Cost-Effectiveness	24
4. Conclusions and Lessons Learned	26
Annex A Producer Survey Explanation of Design	30
Annex B AAFC Econometric Analysis of the BSE Response	33
Annex C UK Government BSE Measures	35
Annex D Number of BSE Cases Worldwide	37
Annex E Understanding the Supply Chain in Beef Markets	38
Annex F BSE Program Profiles Industry Sustaining Programs Programs to Sustain Orderly Markets and Support Prices	41
Annex G Provincial BSE Programs	46

Executive Summary

This report examines the relevance, success and cost-effectiveness of Agriculture and Agri-Food Canada (AAFC) programming related to Bovine Spongiform Encephalopathy (BSE), in particular AAFC's "industry sustaining" and "industry repositioning" programs. The objectives of the evaluation were to determine whether the programs were relevant to the needs of agricultural producers and processors affected by the BSE crisis at the time; to determine the extent to which the programs achieved their stated objectives; and to examine the adequacy of program design and delivery.

Overview of the Federal Response

On May 20, 2003, when one Canadian cow tested positive for BSE (or Mad Cow disease), more than 40 countries, including the United States (US), closed their borders to imports of Canadian cattle, beef, and other ruminants (e.g., bison and sheep). This had several immediate implications for the Canadian cattle industry.

- ▶ Canadian exports of 20,000 live cattle per week ceased.
- ▶ Processors reduced their slaughter rates from 70,000 to 30,000 head per week because of increasing inventories of lower-value beef cuts.
- ▶ Producers delayed marketing their cattle in hopes of the border reopening or the announcement of a federal program.

As the length of the border closure increased, producers expressed strong concerns that they would be unable to afford to feed their cattle and would therefore be forced to dispose of the animals themselves. They were also concerned that when the US reopened its border to imports from Canada, the release of the pent-up inventory would depress cattle and beef prices significantly.

In response to the border closure, producer concerns, and the evolving nature of the BSE crisis, the federal government introduced a number of industry sustaining BSE-related programs. Initial programming was introduced under the assumption that the US would reopen its border within 10 weeks and was therefore intended to help the industry weather the border closure. As time passed and the border closure persisted, in an effort to reduce industry reliance on export markets and to minimize its exposure to future crises of this nature, the federal government shifted the focus of its programming to repositioning the industry towards increased profit and viability through strategic investments in capacity, increasing the systems of quality control, and increasing foreign confidence in the Canadian product.

A total of 18 different AAFC programs were introduced (seven industry sustaining and eleven industry repositioning), and a total of \$2.1 billion in federal funding was budgeted over a five-year period from 2003-04 to 2007-08. One of the programs, the Canadian Cattleman's Association Legacy Fund, will continue to receive funding until 2015.

Methodology

The evaluation synthesizes the findings of two separate BSE evaluations conducted by Prairie Research Associates (PRA) Inc. on behalf of AAFC: a summative evaluation of AAFC's industry sustaining programs and a formative evaluation of AAFC's industry repositioning programs, both undertaken over a two year period from 2006-07 to 2007-08.¹ The findings are based on evidence gathered from six sources: A document and file review; key informant interviews; case studies; market and economic analysis; analysis of program data; and a producer survey.

Key Findings

The BSE "industry sustaining" and "industry repositioning" programs were developed quickly, in a climate of uncertainty, and multiple lines of evidence indicate that these programs were relevant to the needs of the agriculture industry; they aligned with AAFC's Strategic Outcome of Security of the Food System; and they represented an appropriate response to an unfolding and uncertain crisis. In terms of program impacts, a high percentage of producers participated in BSE industry sustaining programs, and a majority saw these as being valuable in supporting financial operations. The BSE industry sustaining programs achieved their key objectives of sustaining the industry through the crisis, avoiding a mass slaughter of the cattle herd, and maintaining producer and consumer confidence in the industry. The industry repositioning programs provided support to reduce the industry's vulnerability to trade restrictions, to enhance Canada's traceability system and to facilitate the evolution toward increased profits and viability through value-added processing opportunities for the Canadian livestock industry. At the time of this evaluation, industry repositioning programs were making progress towards their intended outcomes. The programs were delivered efficiently and effectively, taking advantage of existing AAFC program terms and conditions, teams and experience.

The design of the BSE industry sustaining programs was predicated on a discrete supply chain. Due to the structure of the beef and cattle industry, some vertically integrated producers were able to obtain support from multiple elements of the BSE programs. However, these instances were rare, and the total financial support to individual producers remained relatively low due to the scale of operations. More significantly, processors who were vertically integrated backwards into production (e.g., feedlots) benefited from the support to expand the domestic slaughter capacity, the support provided to feedlots and the price reductions for live cattle. Overall, this reflects the challenge of designing programs that target industry participants that operate at specific points in the supply chain, without unduly benefiting entities that are vertically integrated.

¹ A summative evaluation examines impacts in order to make a decision about overall effectiveness. Summative evaluations are typically undertaken at the end of a four-year life cycle of a program when intermediate and longer-term outcomes begin to be realized. A formative evaluation examines the effectiveness of program implementation and is usually conducted in mid-cycle of the program (normally within 2 years of start-up).

In terms of the programs to increase domestic slaughter capacity, these programs were implemented as part of a contingency plan in the event the border remained closed for a lengthy period. In this eventuality, the Canadian livestock industry would have been significantly reduced without an expanded domestic slaughter capacity. As it turned out, the border did re-open in 2005, and this, along with several other factors resulted in an excess slaughter capacity in Canada. It should be noted that AAFC did suspend or cancel the slaughter capacity programs, given that sufficient slaughter capacity had been (or was planned to be) established. Government officials could not have known that the US border would re-open to exports of live cattle under thirty months within two years, reducing the need to expand domestic slaughter capacity.

In terms of cost-effectiveness, government support helped avert the most serious financial impacts of the BSE crisis and allowed most producers to sustain their operations (at least those that wanted to and were not about to retire). It should be noted that the programs reviewed in the context of this evaluation were BSE specific and not reflective of the total amount of support received by producers, who received additional funding through other federal programs (such as the Canadian Agricultural Income Stabilization Program) or provincial programs. As is the case with disaster-relief type programs, Government program payments are only intended to compensate a portion of the financial losses incurred by producers. Given the severity of the crisis, the industry sustaining programs were not sufficient on their own in most cases to enable producers to manage the financial crisis resulting from the border closure, and many producers experienced long-term reductions in their net worth.

The intended long-term impacts of the BSE industry repositioning programs were not well-defined at the outset, and no system was put in place for measuring or tracking the long-term performance of these programs. In some cases, there were no indicators and targets to facilitate performance monitoring. In many cases, the performance measures that were identified in program contribution agreements were activity and not outcome-based. In addition, not all programs were formally required to maintain databases on program applicants and/or projects, affecting the availability of information to support performance monitoring and reporting.

BSE programs were rolled out quickly to respond to a crisis situation, and multiple lines of evidence indicate that the response was as timely as could be expected. The border closed on May 20, 2003 and the first funds started to flow on July 1, 2003 through Phase I of the BSE Recovery Program (Slaughter Element). Based on the findings of this evaluation, there was good FPT and industry collaboration, and no perceived overlap and duplication with other AAFC programs, or with provincial or territorial BSE-related programs. However, due to the differing and inconsistent federal and provincial data definitions and collection systems used to track producers and their participation in various programs, governments cannot confirm with 100% certainty who benefited and by how much across all industry sustaining programs. Furthermore, it is not possible to conclude definitively that there were no cases of duplicate payments to program recipients.

Lessons Learned

Since all BSE-response related programs have ended (with the exception of the Canadian Cattleman's Association Legacy Fund, which will continue to receive funding until 2015), the focus of this evaluation was on lessons learned as opposed to recommendations for improvement. The following lessons learned from the experience with BSE-response related programs may serve to inform the design of future disaster-related initiatives in the agricultural sector.

1. Given that it is not possible to predict when the agricultural sector will be confronted with another disaster of the magnitude of BSE, it is critical to maintain knowledge of current market structures. There is also value in simulating a range of possible demand and supply side crises, in order to develop a readiness response, which includes: establishing appropriate baselines for the sector; developing a list of internal and external experts with knowledge of how to respond to a crisis situation in the agricultural sector; and a sense of the organizational structure required to manage the crisis.
2. In a crisis situation, there is pressure to focus on the achievement of short-term activities and outputs, and not long-term outcomes. In developing a readiness response for future crises in the agriculture sector, there is value in giving some thought to the associated performance measures and expected immediate, intermediate and end outcomes. Where possible, pre-planning expected outcomes, indicators and targets will facilitate the speed with which disaster-related programs can be launched, and will ensure that effective measures are in place to report on performance.
3. In a crisis situation, there are trade-offs between maintaining tight management controls and facilitating the speed of program implementation through the use of multiple delivery agents, including provinces and territories. To facilitate effective program delivery (i.e. reduced potential for overlap and duplication of program payments) and performance monitoring and reporting, AAFC should ensure clarity and consistency in how data is defined and performance information is collected.

1. Introduction

1.1 Background

On May 20, 2003, after one Canadian cow tested positive for Bovine Spongiform Encephalopathy (BSE, or Mad Cow Disease), more than 40 countries including the United States, the principal export market for Canadian cattle and beef, closed their borders to imports of Canadian cattle, beef, and other ruminants (bison, sheep, etc.). This had several immediate effects on the Canadian cattle industry:

- ▶ Canadian exports of 20,000 live cattle per week ceased;
- ▶ Processors reduced their slaughter rates from 70,000 to 30,000 head per week due to building inventories of lower-value beef cuts;
- ▶ Producers delayed marketing their cattle.

The US border reopened to cuts of beef from cattle under thirty months, within four months; however it was two years before the border reopened to live animals under thirty months. As the border closure continued and market prices continued to be depressed producers expressed strong concerns that they would be unable to afford to feed their cattle and therefore would be forced to dispose of animals. They were also concerned that when the US reopened its border to imports from Canada, the release of the pent-up inventory would depress cattle and beef prices. As the crisis unfolded, its impacts extended to additional market segments and elements of the value chain.

In response to the evolving crisis, the federal government quickly introduced a succession of BSE-related programming. The first suite of programs was aimed at sustaining the industry, as a whole, by preventing, on the one hand, the flooding of markets with cattle volumes that could not be absorbed by the domestic slaughter capacity and, on the other hand, the disposal, at significant loss, of large volumes of cattle that producers could not afford to maintain. Some of these programs were cost-shared with the provinces. The second suite of programs was intended to help the industry's evolution toward increased profits and viability by supporting strategic investments in capacity, improving quality control systems (to increase foreign confidence in the Canadian product), and marketing.

1.2 Evaluation Scope and Methodology

AAFC's Office of Audit and Evaluation evaluated BSE related programs that were in place from 2003-04 to 2006-07. The purpose of this evaluation was to assess whether the industry sustaining and industry repositioning programs were relevant to the needs of producers and processors affected by the BSE crisis at the time; to determine the

extent to which the programs achieved their stated objectives; and to examine the adequacy of program design and delivery.

This report consolidates the findings of a summative evaluation of federal/provincial BSE industry sustaining programs, and a formative evaluation of BSE industry repositioning programs that were completed in 2007 by PRA Inc. on behalf of AAFC. Since these evaluations were completed, all of AAFC's BSE-response related programs have ended, with the exception of the Canadian Cattleman's Association Legacy Fund, which will continue to receive funding until 2015. These evaluations were completed under the requirements of the 2001 Treasury Board Policy on Evaluation, and as a result they address the core issues of relevance, success, and cost-effectiveness as required by the 2001 Policy.

It was decided not to complete a summative evaluation of the industry repositioning programs to support this evaluation. These programs have since ended and have not been renewed. An evaluation of AAFC's FPT traceability programs will be included as part of the evaluation of Cost-Shared Non-Business Risk Management programming, which is scheduled for 2011-12; market information and export capacity building programs are scheduled for evaluation in 2011-12; AAFC's federal-only traceability programs are identified for evaluation in 2012-13; and an evaluation of the Canadian Cattlemen's Association Legacy Fund is identified in AAFC's Five Year Evaluation Plan for 2012-13.

It should be noted that other federal departments launched complementary programs to address elements of the BSE crisis that fell under their respective mandates, e.g. the Public Health Agency of Canada and the Canadian Food Inspection Agency launched a series of programs to address animal health and food safety. These programs are not included in the scope of this evaluation, and an assessment of their relevance and performance have been captured in separate program evaluations

CFIA Evaluation:

(<http://www.inspection.gc.ca/english/agen/eval/bseesb/evale.shtml>)

PHAC Evaluation:

(http://www.phac-aspc.gc.ca/about_apropos/evaluation/reports-rapports/2009-2010/prion/index-eng.php)

The AAFC evaluation draws on the following six lines of evidence:

Qualitative methods:

Key Informant Interviews: Key informant interviews provided insight into all program aspects, including rationale / relevance, design and delivery, success, and cost-effectiveness. Interviews were conducted with:

Industry Sustaining Programs

- ▶ AAFC officials (n=4)
- ▶ Provincial government representatives (n=16)
- ▶ Industry representatives (n=8)

Industry Repositioning Programs

- ▶ AAFC officials (n=13)
- ▶ Program participants (n=11)

Case Studies: Case studies involved 10 producers selected from across Canada and at different scales of operation. These case studies provide detailed information about the impact of BSE programming on the structure of producers' operations, management decisions, and financial situations. These case studies follow producers' experience throughout the BSE crisis and examine how their operation/situation evolved with the introduction of the BSE programming.

Case studies for industry repositioning programs involved four participants, randomly selected from lists of ongoing projects. Selected cases include one project aimed at increasing slaughter capacity and three market development projects. The case studies provide detailed information about the objectives, outputs and outcomes of individual projects aimed at repositioning the industry.

Quantitative methods:

Comprehensive Document and File Review: The comprehensive review supports the synthesis and analysis of key administrative and policy documents/files related to the BSE Programs. This includes Treasury Board Submissions, AAFC management documentation and performance reports, federal-provincial implementation agreements, financial reports, program descriptions/terms and conditions, and financial analysis. This step also includes a literature review of the BSE crisis with special emphasis on the experience in the UK.

Market and Economic Analysis: The market and economic analysis establishes a baseline for the industry and charts the impact of the crisis through price and income declines. The following sources support the analysis of the impact of BSE on producer / processor incomes - Statistics Canada, CanFax, and internal simulations conducted by the Economic Sectoral Analysis Division of AAFC.

Analysis of Program Data: Program administrative data provide descriptive statistics about the programs and support the development of the sample frame for survey of participating producers.

Producer Survey: The survey of program participants provides insight into producers' experiences with the industry sustaining programs and the impact of the programs on the structure of their operations, their management decisions, and their financial

situation. The national survey of producers was conducted in all provinces (excluding the territories and Quebec) and addressed the four federal-provincial programs: the BSE Recovery Program – Slaughter Element, the Cull Animal Program (CAP), the Fed Cattle Set-Aside Program (FED), and the Feeder Calf Set-Aside Program (FEE). Quebec conducted a mail survey of a sample of producers receiving BSE-related programming. In order to avoid respondent fatigue, it was agreed that the results of the survey conducted by the Province of Quebec would be incorporated into the national producer survey as appropriate. The detailed methodology for the survey is attached in Annex A.

1.3 Evaluation Constraints / Risks

There were a number of constraints to completing this evaluation. The first involved the challenge of integrating performance information for 18 different programs to provide an overarching assessment of the federal government's response to the BSE crisis. As a result, this evaluation contains limited performance information on each specific program. Instead, the focus is on the larger relevance and performance of the suite of BSE response programs as a whole.

A second constraint involved merging the results of separate summative and formative evaluations, undertaken from 2006-07 to 2007-08. While the summative evaluation of industry sustaining programs addressed program impacts, the formative evaluation of industry repositioning programs assessed the impacts of programs that were still in the middle stage of implementation. Accordingly, the economic data and program performance information presented in this synthesis evaluation report reflect the point in time at which the summative and formative evaluations were completed in 2007-08.

Third, In terms of the data used to support the economic analysis of the BSE response, the AAFC models used (Aglink and Food and Agriculture Regional Model (FARM)) contain several embedded institutional assumptions expressed as constraints and identities. Please refer to Annex B for a description of the models used and the associated assumptions.

2. Program Profile

2.1 Context

In order to understand AAFC's BSE-response related programming, it is helpful to understand the history of BSE in the agriculture sector, and the supply chain for beef production.

History of BSE and its Implications for the Agriculture Sector

BSE first became an identifiable disease near the end of 1986, when the UK confirmed that a disease that had been afflicting several cattle was a form of transmissible spongiform encephalopathy (TSE). The original hypothesis was that cattle acquired BSE from feed containing sheep tissues infected with scrapie, a similar disease. As a result, and because scrapie was not known to be transmissible to humans, it was assumed that this would also be the case with BSE. During this early period, the UK government repeatedly asserted that BSE posed no risk to humans. However, this changed in 1996, when the UK government announced a suspected linkage between BSE in cattle and a new variant of Creutzfeldt-Jakob disease (vCJD) in humans, attributed to the consumption of tissues from BSE-infected animals.

The ramifications of the announcement of the linkage between BSE and vCJD were immediate: BSE was not only an animal-health issue, but now a food-safety and human health issue as well. The UK banned the use of all animal protein in animal feed, and banned the entry of cattle over 30 months of age into the human food chain. On March 27, 1996, the EU placed a ban on all exports of UK live cattle and beef and beef by-products to EU countries and the rest of the world. Consumption of beef in the UK dropped and export markets closed. The UK government ordered a mass cull in an attempt to manage the human health aspects of the disease. Additional information on UK response and compensation measures can be found in Annex C.

In contrast, the Canadian BSE response was designed to avoid the need for a mass cull, partly because of the logistics and costs arising from the disposal of a large volume of carcasses, and the desire to avoid the negative image of a mass cull, particularly given that Canada accounted for only 0.01% of the world's confirmed BSE cases in cattle (as opposed to the UK, which accounted for 97.1%). Please refer to Annex D for additional statistics on the number of BSE cases worldwide.

Supply Chain in Beef Production

The cattle and beef markets are tightly integrated, in terms of both their supply chain and the fact that North America is a single market (please refer to Annex E for a detailed explanation of the supply chain in beef production, and the disposition of cattle and red meat in 2002, prior to the BSE crisis).

The beef industry is located primarily in western Canada, with the three Prairie provinces accounting for 80% of live cattle (40% in Alberta); and 77% of slaughter

capacity (71% of capacity in Alberta). Prior to the border closure in May 2003, Canada exported just over 1 million animals each year, or about 20,000 head per week. In total, domestic and export marketing of fed and cull animals was about 4.2 million or 80,000 per week.

The cattle and beef markets are integrated in predictable ways. Cattle prices show a seasonal cycle, with highs in the late winter/early spring and lows in the late summer and fall. Prices at each stage of the supply chain reflect demand/supply conditions at that stage. In general, price variation falls the closer one gets to the retail level. At the retail level, prices are determined within a competitive market for animal protein and show relatively little variation. In contrast, price variations further up the supply chain, to the feedlots and cow-calf operations, show much more variation and oversupply quickly leads to price reductions

Cattle are not a storable commodity. As soon as a calf is born, a biological cycle governs the disposition of the animal. Heifers, destined as replacements in a dairy herd, displace older cows that will come out of production and move into the cull animal market. Cattle that are being raised for meat move through a production process that may include backgrounding and feedlots. Only a few farmers will integrate a cow-calf to finishing operation and sell directly to packers. Finishing at the feedlot will result in a steer or heifer that is ready for harvesting in about 15-24 months. The key idea is one of flow; and interruption of this flow at any stage immediately affects prices and quantities before and after the stop point. The capacity to absorb an interruption at any stage without price effects is only a matter of weeks.

2.2 Overview of Programs

A total of 18 different programs were launched by AAFC in response to the BSE crisis. Initially, the focus was on maintaining domestic markets to help sustain the industry, until exports could resume. Programs introduced to help sustain the industry included a mix of federal-provincial programs jointly financed on a 60:40 basis, as well as several federal-only programs.

Industry Sustaining Programs:

- Programs to Sustain Orderly Markets and Support Prices (Federal-Provincial)
 - BSE Recovery Program – Slaughter Element & Inventory and Pricing Element
 - Cull Animal Program
 - Fed Cattle Set-Aside
 - Feeder Calf Set-Aside Program
 - Herd Management for Older Animals
- Programs to Compensate Producers for Revenue Decline (Federal-Only)
 - Transitional Industry Support Program (TISP) – Direct Payment
 - Farm Income Payment Program (FIPP) – Direct Payment

- Canadian Agricultural Income Stabilization Program (CAIS) – Special Interim Payment.

As time passed and border closures persisted, governments shifted their focus to industry repositioning programs to reduce industry reliance on the US market and minimize its exposure to future crises of this nature. Programs introduced to help reposition the industry included the following:

Industry Repositioning Programs: (Federal-Only)

- Programs to Increase Slaughter Capacity
 - Ruminant Slaughter Loan Loss Reserve Program
 - Ruminant Slaughter Facility Assessment Program
 - Ruminant Slaughter Equity Assistance Program
- Programs to Improve Tracking and Tracing
 - Canadian Livestock Identification Agency
 - Canadian RFID Reader program
 - Canadian Integrated Traceability Pilots
 - National Premise ID Database
- Market Development Programs
 - Sustaining Genetic Quality of Ruminants
 - Other Ruminants market development
 - Canadian Cattlemen's Association's Legacy Fund

A complete summary of program profiles can be found in Annex F. Table 1 outlines the timeline for implementation of the various BSE response-related programs.

Table 1: Timeline for BSE programs

Program	J F	M A	M J	J A	S O	N D	J F	M A	M J	J A	S O	N D	J F	M A	M J	J A	S O	N D	J F	M A	M J	J A	S O	N D	J F	M A	M J	J A	S O	N D	J F	M A	M J	J A	S O	N D			
	2003						2004						2005						2006						2007						2008								
BSE Events																																							
Border closed			•																																				
Border opened to select cuts from animals Under Thirty Months (UTM)					•																																		
Tracking and tracing initiatives announced							•																																
Border opened to imports of beef from animals UTM (restrictions lifted)								•																															
Industry repositioning programs announced											•																												
Further programs to expand slaughter capacity and market development programs announced														•			•																						
Border opened to animals UTM															•																								
Traceability pilots announced																							•																
Programs to Sustain Orderly Markets and Support Prices																																							
BSE Recovery Program Phase I – Slaughter Element and Inventory Pricing Element																																							
BSE Recovery Program Phase II – Cull Animal Program																																							
BSE Recovery Program Phase III – Fed Cattle Set-Aside Program																																							
BSE Recovery Program Phase III – Feeder Calf Set-Aside Program																																							
Programs to Compensate Producers for Revenue Decline																																							
TISP – Direct Payment																																							
FIPP																																							
CAIS - Special Interim Payment																																							
Programs to increase slaughter capacity																																							
RSLLR																																					Suspended		
RSFAA																																					Cancelled		
RSEA																																					Suspended		
Tracking and tracing programs																																							
CCIA																																							
CLIA																																							
RFID Reader Program																																					Extended		
Canadian Integrated Traceability Pilots																																							
Market development programs																																							
Sustaining Genetic Quality																																					Extended		
Genetics Market Development																																					Extended		
Other Ruminants Market Development																																					Extended		
Canadian Cattlemen's Association Legacy Fund (2005 to 2016)																																							

2.3 Program Resources

A total of \$2.1 billion in federal funding was allocated over a five-year period from 2003-04 to 2007-08 for BSE response-related programs. One of the programs, the Canadian Cattleman's Association Legacy Fund, will continue to receive funding until 2015. Table 2 outlines total budgeted expenditures for Industry Sustaining and Industry Repositioning Programs.

Table 2: Budgeted Expenditures for BSE-Related Programming*	
Program	Amount (\$ millions)
<i>Industry Sustaining Programs</i>	
Total Industry Sustaining Programs	\$1,967.6
<i>Industry Repositioning Programs</i>	
Total Industry Repositioning Programs	\$131.8
TOTAL BSE-RELATED PROGRAMMING	2,099.4

*Budgeted expenditures drawn from review of AAFC foundational documents and public announcements

The BSE industry sustaining programs included a mix of federal-provincial programs jointly financed on a 60:40 basis, as well as several federal-only programs, while the industry repositioning programs were federal-only programs.

3. Evaluation Findings

3.1 Relevance

3.1.1 Was AAFC's response to the BSE crisis relevant to the needs of producers and processors?

BSE Industry Sustaining Programs

The border closure due to the BSE crisis immediately stopped the flow of beef and live cattle, which immediately depressed prices for all products below the retail level. Because processors could not sell beef and cattle could not move internationally, the only option was to sell into the Canadian market. Processors could increase slaughter levels within limits by running extra shifts, and were able to divert processed animals into storage (frozen beef). Canadian consumers also expanded their consumption. However, this could absorb only a small portion of the supply. Another key problem for the cattle-beef supply chain, and processors was the fact that renderers were also unwilling or hesitant to accept cattle by-products (e.g., products that make tallow, and

meat and bone meal) due to the uncertainty regarding markets for these products. This caused significant problems for cattle slaughterhouses as previously by-products were a source of revenue, following the BSE crisis, some renderers refused to pick-up by-products or were charging for removal.

The price impact was significant across the supply chain (even at the wholesale level). Figure 1 shows the price impact on the Alberta price of live heifers, which is probably the most marked example of a price decline due the border closure. The price decline started immediately on the announcement of the closure, and continued over the summer of 2003, stabilizing and reversing only in September, when a partial opening allowed boxed beef from cattle under thirty months to move across the border.

In the case of the BSE crisis, where prices dropped suddenly and dramatically, the cow-calf operator could either accept the lower prices, or delay marketing in the hope that restrictions would ease, in which case the costs for feed and managing the herd would rise. Many producers faced the difficult decision of whether to release their animals into a depressed market or incur the costs of retaining the animals in the hopes of securing a better price later. As the crisis unfolded and the market for live animals remained closed, these producers were forced to sell at a substantial loss, having incurred increased feed costs as they held their animals back. They lost twice. As one case study participant observed, it was best to continue to market, rather than try to outwit the market.

Many producers incurred significant losses and increased debt levels to manage during this unfolding crisis. Expectations existed on the part of the industry and government that the border would reopen quickly. The re-opening to boxed beef in September 2003 and the January 2004 announcement by the US government that the border would open to live cattle under thirty months kindled hope that the crisis would pass quickly. No one foresaw the success that a producer group in the US (R-Calf) would have in persuading a Montana federal district court to maintain the ban until July 2005.

AB - Live Heifers

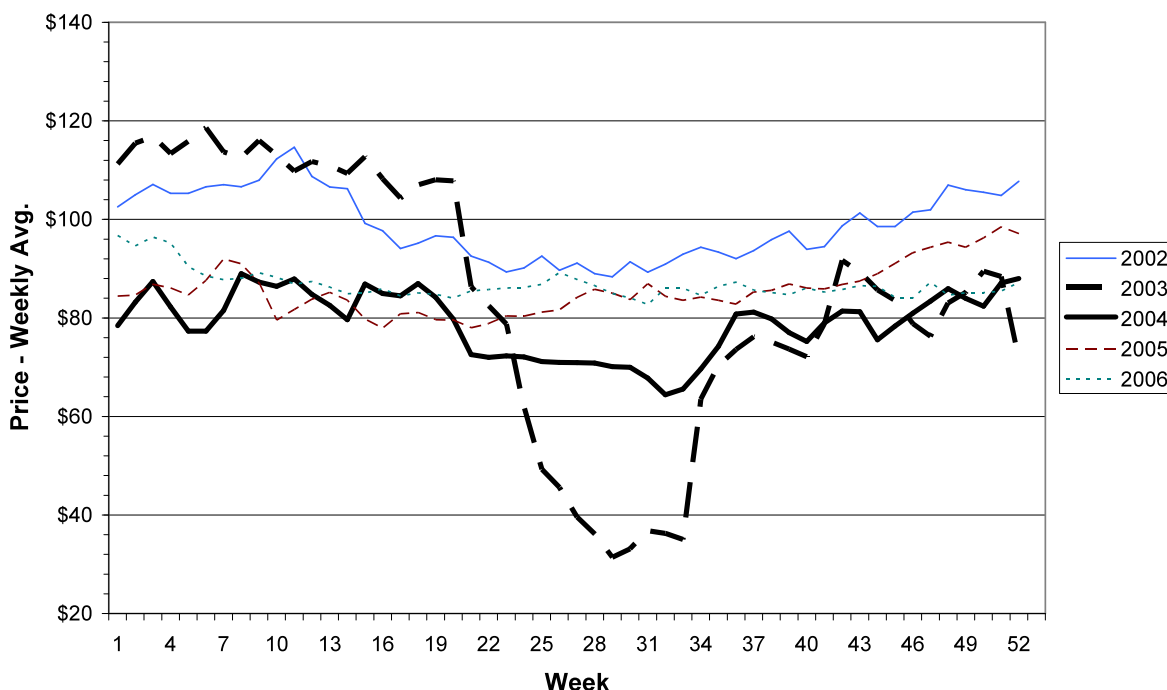


Figure 1: Price of live heifers – Alberta
(Source: Canfax)

Industry Repositioning Programs

The BSE crisis highlighted Canada's dependence on export markets, particularly the US. According to the Report of the Standing Committee on Agriculture and Agri-Food, titled *Canadian Livestock And Beef Pricing In The Aftermath Of The BSE Crisis* (April 2004), prior to the BSE crisis, Canada exported approximately 60% of its beef production, with the US accounting for 80% of Canadian beef exports and almost 100% of cattle exports. The report noted that Canadian beef producers were increasingly dependent on US slaughterhouses due to under-capacity for slaughter in Canada.

The programs for increasing slaughter capacity were expected to reduce Canada's vulnerability to trade restrictions – such as the closure of the US border to live imports of Canadian cattle – and contribute to greater value-added processing opportunities for the Canadian livestock industry. The programs aimed to achieve this by increasing Canada's federally-inspected slaughter capacity, ensuring that funds were invested only in new or expanded slaughter facilities that were financially viable, and facilitating significant producer investment in, and delivery commitment to domestic processing facilities.

The programs for tracking and tracing Canadian livestock were expected to improve the safety of Canadian beef and products from other ruminants; provide Canada with some

leverage to negotiate for the reopening of closed markets; and facilitate the expansion of sales of beef and other ruminant products into new markets. It was recognized that cultivating a larger market for exports of Canadian beef and other ruminant products would reduce the future risk of trade restrictions imposed by a single country. In addition, these efforts were expected to increase the profitability of the industry by yielding higher prices for Canadian beef and other ruminant products.

Specific activities aimed at increasing and ensuring Canada's access to export markets through improvements to tracking and tracing systems included measures such as: ensuring that Canada had an efficient national animal identification system; enhancing the Canadian Cattle Identification Agency's (CCIA) cattle tracking system, and adding capacity to track sheep and bison; ensuring that industry had the equipment required to participate in Canada's tracking and tracing system; and accelerating the implementation and integration of traceability systems.

Market development was seen as a key component in reorienting the livestock industry to meet the challenges of a post-BSE environment. The closure of the US and other borders to imports of Canadian beef and cattle severely reduced the quantity of Canadian beef and cattle exported, and highlighted Canada's dependence on access to export markets, and the need to reduce its reliance on any one single market. It also demonstrated the need to maintain and develop market access for other ruminants (e.g., purebred live animals) and their products (e.g., semen and embryos).

AAFC's BSE-related market development activities were intended to provide a service infrastructure to allow the purebred industry to re-establish export markets to sell live animals and/or genetic materials, to undertake market development activities in order to regain access to existing markets, and to secure new domestic and international markets for Canadian ruminant products and genetics.

In conclusion, the federal government reacted promptly to the BSE crisis by implementing different programs as the situation unfolded. The industry sustaining and industry repositioning programs were relevant to the needs of producers and processors at the time. The perspective of key informants and case study participants is that the programs represented the best response to an unfolding and uncertain crisis. As noted previously, the crisis in the Canadian beef industry was not one of a widespread epidemic of BSE. Rather, it was the result of the closing of export markets to Canadian beef due to a very small number of BSE cases. The initial government response, in consequence, focused on maintaining an orderly domestic market while working to open export markets. The federal government could have imposed a price floor for live cattle at different stages of finishing but this policy would have had significant costs compared to the price and income supports option, and would have been considered an extreme form of market regulation.

Given the way the crisis unfolded, and the fact that it is very hard to chart a policy response in such a climate of uncertainty, the sequence of responses on the part of AAFC appears to have been appropriate. It was not known how long the US border would be closed. In this environment, the focus in the short-term was on

maintaining orderly markets and some normality to prices, by supporting the flow of animals to slaughter. Once it became evident that it might be some time before the border would reopen to live cattle, the focus of government shifted from shorter term market stabilization to compensating producers for the income losses resulting from price declines, to helping the industry reposition itself.

3.1.2 Were the industry sustaining and industry repositioning programs aligned with federal government priorities and AAFC Strategic Outcomes?

Both the industry sustaining and industry repositioning programs were aligned with federal government priorities. The 2004 Speech from the Throne highlighted BSE and the importance the Government attached to obtaining more reliable access to US markets. Budget 2004 also acknowledged the negative impact of BSE on the Canadian economy and allocated funding for specific BSE-related initiatives. Budget 2005 highlighted total investments of \$544 million in the agriculture sector since Budget 2004, and new funding of \$130 million, which resulted in total funding of \$674 million to support Canadian farmers, to among other things, address the difficulties due to the BSE crisis.

Both the industry sustaining and industry repositioning programs were aligned with AAFC's Strategic Outcome of *Security of the Food System*, the focus of which was to support a secure and sustainable agriculture and agri-food system that provides safe and reliable food to meet the needs and preferences of consumers. This Strategic Outcome was supported by a number of Program Activities, including Business Risk Management, Food Safety and Food Quality, and Markets and International.

The Program Activity for Business Risk Management, with which the industry sustaining programs were aligned, as well as programs to support the development of domestic slaughter capacity, acknowledged that production risks will always be intrinsic to the agricultural business. It further acknowledged that certain production risks, including natural risks from animal diseases such as BSE and avian influenza, were unpredictable, beyond producers' (and government's) control, and often had wide-ranging and devastating consequences for the agricultural sector.

The Program Activity for Food Safety and Food Quality, with which the tracking and tracing programs were aligned, acknowledged that animal health had significant impacts on public health, environmental sustainability, food security, and the economic well-being of the agriculture and agri-food sector, and of Canadians as a whole.

The Program Activity for Markets and International, with which the market development programs were aligned, acknowledged the critical importance of maintaining current market access, expanding market access to reduce Canada's reliance on any single market, and the fact that continued success in world markets depended on international recognition of Canadian actions in food safety and quality

3.2 Impacts / Success

3.2.1 To what extent did the Government's response help producers to sustain the economic viability of their operations and manage their short-term finances?

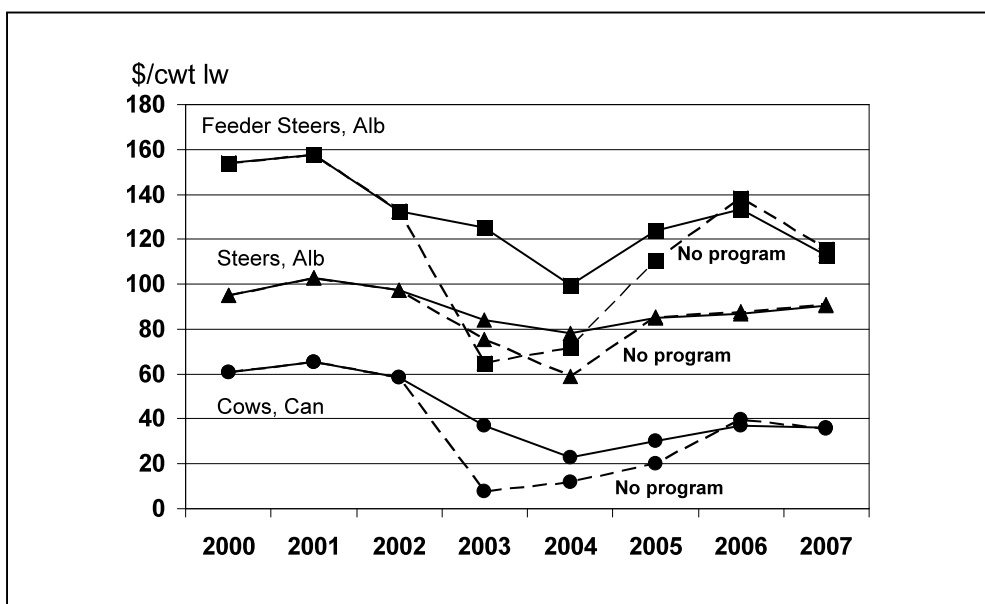
The impact and success of the federal government's BSE response can be measured by the impact on marketing and prices; impacts on the producers, in terms of short-term financial viability; and impacts on processors.

In terms of industry sustaining programs, the suite of BSE price support and set-aside programs was successful in preventing the flooding of slaughter markets with cattle and, consequently, in moderating price decreases to producers. Over three-quarters of producers (77%) that responded to the survey said that they delayed the marketing of cull animals during the border closure. Just under one half of producers (47%) noted that they delayed the marketing of calves born in 2004 during the border closure and 40% of producers said that they delayed the marketing of animals ready for slaughter.

The success of the programs in encouraging producers to delay marketing their animals is reflected in the higher prices they received for their animals, compared to what they would have received in the absence of the BSE-related programs. Figure 2 shows that the programs averted a substantial reduction in price especially for cows and feeder steers. In 2003, the cow price would have been as low as 8\$/cwt. The set aside program prevented a huge price drop in 2003 of the feeder steer price. On average the programs prevented the feeder steer price from dropping by 16%, the fed steers by 6.7% and the cow price by 30%.

BSE program payments were a significant source of net farm income that partially offset dramatic declines in farm income during the BSE crisis. Despite the success of the BSE price support programs, one of the challenges producers faced during the BSE crisis was managing their operations' cash flow and finances. The producer survey indicates that, for the vast majority of producers (94%), livestock revenue decreased on average by 41% as a result of the BSE crisis. A smaller proportion of Quebec respondents (31%) indicated a decrease in revenue as a result of the BSE crisis, a finding which almost certainly reflects the high proportion of dairy farmers in this province.

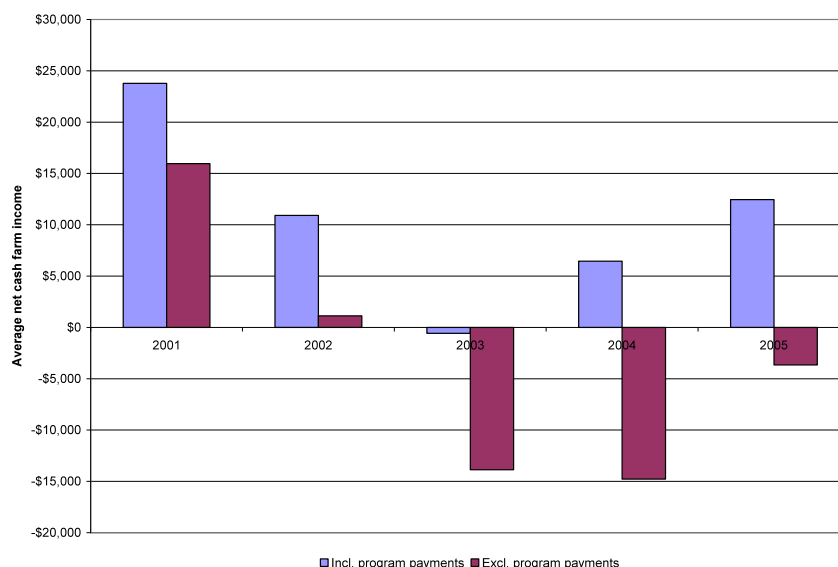
Figure 2: Program impact on cattle prices



Source, Research and Analysis Directorate, AAFC, January, 2007

The Farm Financial Survey (a joint initiative by AAFC and Statistics Canada) offers some insight into the impact of the programs on farm incomes during the period of the border closure. Figure 3 shows the impact of income support programs on farm incomes for the periods before, during and after the BSE crisis. As can be seen, government payments comprise a high proportion of total farm income during the period 2003-2004, confirming both the on-going problems faced by cattle producers during this period and the importance to producers of government assistance.

Figure 3: Average Net Cash Farm Income of Beef and Cattle Farms When All Program Payments (BSE, NISA/CAIS, PI, etc.) are included and excluded, all of Canada, 2001-2005



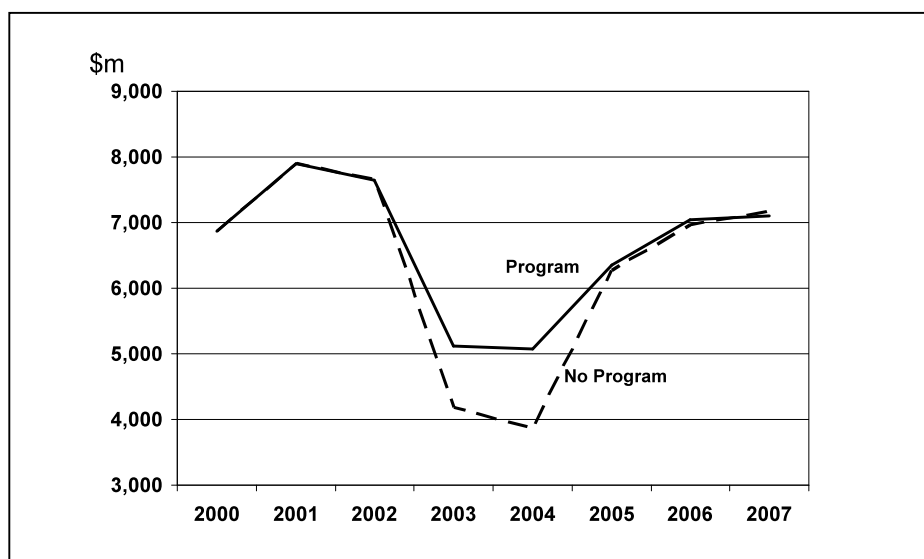
Source: Farm financial Survey 2006 (special runs prepared by AAFC)

As is the case with disaster-relief type programs, government program payments are only intended to compensate a portion of the financial losses incurred by producers. Given the severity of the BSE crisis, government program payments were not sufficient on their own, in most cases, to enable producers to manage the financial crisis resulting from the border closure and many producers experienced long-term reductions in their net worth.

Those that survived the crisis adopted a variety of strategies besides participation in government programs to maintain their operations. For example, the survey responses indicated that techniques for managing the crisis included loan financing (47%), increasing off-farm work (42%), selling business assets, or borrowing money from family. In one case study, the producer started to sell meat directly to the consumer. In another case, the farmer planned to convert his operation to intensive pasture and rent land, effectively getting out of a cow-calf-feedlot operation.

Figure 4 shows the dramatic reduction in cash receipts received by cattle producers as a result of the BSE crisis, and the modest impact that AAFC's industry sustaining programs had on alleviating this impact on farm cash receipts (Note: none of the CAIS payments, nor the special BSE program payments are included in this cash receipt from the market). As is clear from the graph, by 2007 farm cash receipts had returned to levels that were close to those that would have been expected in the absence of BSE response-related programming.

Figure 4: Program impact on cash receipts



Source, Research and Analysis Directorate, AAFC, January, 2007

Many producers suffered long-term reductions to their net worth as a result of the crisis and a sizable percentage left the industry or retired. Based on the findings of the Producer Survey, some producers changed their operation, through for example, direct sales to the consumers (50%); others left farming (20%); some retired (13%); and 10% went into another line of agriculture. The BSE crisis proved to be a major rationalizing force in the sector.

In broad terms, the BSE industry sustaining programs achieved their main objectives, namely they helped to sustain the industry through the crisis; responded to the drop in market price and demand for cattle; compensated producers for financial losses and provided income support; and avoided a mass slaughter of the cattle herd.

3.2.2 What unintended impacts resulted from AAFC's response to the BSE crisis?

The design of the BSE industry sustaining programs was predicated on a discrete supply chain. Due to the structure of the beef and cattle industry, some vertically integrated producers (who integrated cow-calf operations through to finished animals) were able to obtain support from multiple elements of the BSE programs. However, these instances were rare, and total financial support to individual producers remained relatively low due to the scale of operations, as confirmed by the program data reviewed as part of this evaluation (please refer to Table 3 on the Median Payment per Producer).

Table 3: Median payment per producer					
Province	BSE Recovery Program	Cull Animal Program	Fed Cattle Set-Aside	Feeder Calf Set-Aside	Total
	Dollars				
British Columbia	\$1,914	\$1,920	n/a	\$5,104	\$2,560
Alberta	\$4,823	\$922	\$44,940	\$6,000	\$1,674
Saskatchewan	\$1,939	\$1,428	\$22,891	\$3,520	\$1,761
Manitoba	\$3,316	\$17,065	\$4,400	\$826	\$1,728
Ontario	\$2,041	\$12,203	\$4,000	\$783	\$1,198
Quebec	\$706	\$1,920	\$340		\$1,044
Atlantic	\$1,451	\$1,152	n/a	n/a	\$1,254
Total	\$1,385	\$1,167	\$7,040	\$4,800	\$1,594

Source: Administrative data supplied by participating provinces (December 2006)

Note: The data in this table is un-audited and may represent commitments as opposed to actual payments.

Perhaps the most contentious issue of the BSE crisis was the substantial profits obtained by beef processors. Processors who were vertically integrated backwards into production (e.g., feedlots) could potentially benefit from the support to expand domestic slaughter capacity, the support provided to feedlots and the price reductions for live cattle

It was common to hear farmers accuse processors of deliberately reducing the price when BSE support payments began to flow. Prices fell immediately because market participants expected (rationally) that supply would increase. The initial reaction, to withhold supply, slowed the decline in price somewhat. When producers could no longer withhold their cattle (coincidentally with the first government support payments), they sold. Consequently supply increased and prices fell further, conveying the impression of deliberate exploitation of the situation by processors. Given the controversy, the Competition Bureau examined this issue in detail and concluded that the profits received by the packing industry resulted from the functioning of market processes, and that excess profit by the packers did not occur because of collusion or abuse of the market, but because of unique market conditions.²

Another option that the government had would have been to impose price controls along the supply chain. However, this was not perceived as a suitable response, especially in the context of a crisis that all expected (hoped) would be of a much shorter duration than transpired.

In conclusion, the system of industry sustaining subsidies that was designed to respond to the BSE crisis represented an appropriate set of programs considering the pervasive climate of uncertainty. Given that it is not possible to predict when the agricultural sector will be confronted with another disaster of this magnitude, it is critical to maintain knowledge of the current market structures. There is also value in simulating a range of possible demand and supply side crises, in order to develop a readiness response, which includes:

² See Krier (2005) for the analysis, and the Competition Bureau website (<http://www.competitionbureau.gc.ca>) for the press releases on this matter.

establishing appropriate baselines for the sector; developing a list of internal and external experts with knowledge of how to respond to a crisis situation in the agricultural sector; and a sense of organizational structure required to manage the crisis.

3.2.3 Have the industry repositioning programs made progress towards meeting their intended outcomes?

The ultimate goal of the industry repositioning strategy was to position beef and other ruminant industries as exporters of high quality beef and other ruminant products. It was posited that Canada would achieve this goal by increasing domestic slaughter capacity, strengthening Canada's tracking and tracing system, and supporting market development activities.

Programs to Increase Slaughter Capacity

AAFC programs to increase slaughter capacity were implemented as part of a contingency plan in case the border for live cattle remained closed for a lengthy period, or on a permanent basis. In this eventuality, the Canadian livestock industry would have been decimated without an expanded domestic slaughter capacity. As it turned out, the border for live cattle under thirty months did re-open in 2005. The re-opening of the border, along with several other factors, resulted in an excess of slaughter capacity in Canada.

It should be noted that programs to develop slaughter capacity were staged, to increase the likelihood that facilities that did receive federal funding were competitive. The Ruminant Slaughter Facility Assessment Program assisted processors to determine the feasibility of establishing or expanding federally-inspected slaughter facilities. The Ruminant Slaughter Loan Loss Reserve Program provided capital loans for the construction of new or expanded small and medium-sized slaughter facilities. The Ruminant Slaughter Equity Assessment Program contributed up to one-half of a producer's investment in an eligible facility, up to \$20,000 for each investing producer.

Program documents indicate that federally-regulated weekly slaughter capacity increased from an estimated 73,140 head in 2003 to a projected 102,325 in 2007. Achievement of this projected slaughter capacity implied a Canadian kill in excess of 5 million head annually. This was well over the expected 4.5 million head of fed and non-fed cattle available for slaughter in 2007, a number that could be further reduced by the number of live cattle exported. AAFC suspended or cancelled the slaughter capacity programs given that sufficient slaughter capacity had been (or was planned to be) established, also recognizing that it would be difficult for plants using less than 80% of their capacity to be profitable.

The Inventory and Pricing Element under Phase I of the BSE Recovery Program paid processors a fee to increase the slaughter of cattle for domestic consumption. However, this fee flowed only to federally licensed operations, excluding the local

facilities licensed only to produce beef for the local/provincial market. Two case study participants indicated that the availability of local slaughter facilities proved extremely important to their ability to dispose of finished animals and recover some of the losses.

In hindsight, subsidies to expand slaughter capacity to respond to the BSE crisis proved unnecessary, given that Canada was successful in getting the US border re-opened to exports of live cattle under thirty months, within a period of a little over two years. The creation of overcapacity in the slaughter industry was considered as a risk and accepted, given the need to move quickly to address a crisis situation, in an unpredictable environment.

Tracking and Tracing Programs

The BSE crisis highlighted the need for enhancements to Canada's traceability system. The programs launched in response to the crisis were largely focused on developing the infrastructure required for Canada's tracking and tracing system and complemented AAFC's efforts through the Food Safety and Quality (FSQ) Chapter of the *Agricultural Policy Framework* (APF), which aimed to facilitate industry momentum in developing and implementing government-recognized food safety and food quality process-control systems throughout the entire food chain.

The Canadian Cattle Identification Agency (CCIA) released an internet-based Canadian Livestock Tracking System that includes age verification, premise identification, movement, and sighting modules using radio frequency identification technology. At the time of this evaluation, CCIA had received over 2 million birth date records for Canadian livestock and had validated the location information for 22,000 facilities.

The Canadian Livestock Identification Agency (CLIA) defined a self-sustainable business and financial model and provided a forum for discussions and policy development on livestock identification and traceability for animal health emergency management and food safety. The CLIA was dissolved in 2007, as it was replaced by an FPT government/industry forum.

Key informants noted that, at the time of this evaluation, the Canadian Radio Frequency Identification Reader (CRFID) program had not had good uptake. While the program had approved 132 applicants, it was not known how many of these applicants had actually purchased a reader. In an effort to increase program uptake, AAFC extended the program deadline from April 1, 2006 to December 31, 2007, and also expanded the list of eligible applicants to include commercial livestock truckers, commercial feedlots, and grazing cooperatives/community pastures. In terms of the lack of program uptake, a survey respondent noted that the cost of the radio frequency reader technology was not prohibitive (approximately \$4,000 per reader). As a business expense, operators could submit this cost as a tax write off, whereas acceptance of government funding to offset the cost of the reader would constitute a taxable benefit.

Projects under the Canadian Integrated Traceability Program (CITP) were intended to accelerate the implementation of Canada's tracking and tracing system by

demonstrating and researching the effectiveness of different technologies and systems such as animal movement reporting and recording through RFID technology; developing and testing electronic manifest and associated software to enable recording and reporting of animal movement; and integrating traceability data reporting systems in community pastures, at auctions, and across the value chain through RFID reading. Updated information on Canada's traceability system can be found on AAFC's website, under Economic and Market Information related to Food Safety and Quality at <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1180119096169&lang=eng>.

Market Development Programs

AAFC officials proactively supported the diplomatic effort to re-open the border as quickly as possible, while at the same time implementing programs to develop new markets to reduce Canada's future reliance on the US market. At the time of this evaluation, only limited progress reports and information on the short-term outcomes of programs to promote market development for other ruminants and to sustain the genetic quality of ruminants were available, given the stage of program implementation. This made it difficult to assess the progress and impacts of these programs. It should be noted that an evaluation of AAFC's market information and export capacity building programs is scheduled for 2011-12.

Based on the progress reports reviewed for market development programs, it appears that promotional activity did occur. Program participants completed various market development activities such as preparing and distributing promotional materials, developing websites, attending trade shows, participating in trade missions, and registering purebred animals.

The successful reopening of the border cannot be attributed to any one specific program. It was likely a combination of AAFC's market development programs, as well as Canada's diplomatic efforts, and the signal that Canada was strengthening its tracking and tracking programs, and launching new marketing programs in genetics.

3.3 Program Design and Delivery

3.3.1 Was AAFC's response to the BSE crisis timely?

Government programs were viewed, in general, to be timely and useful to producers impacted by the BSE crisis. The border closed on May 20, 2003 and the first program funds started to flow on July 1, 2003. For financial assistance programs, governments needed to determine the nature of the problem, develop eligibility and application processes, create the financial authorities, train staff, create the accounting infrastructure to disburse and control the funding, and publicize the assistance programs. As well, in this case, the federal government had to reach agreement with participating provincial governments on the nature and design of the programs.

All 10 case study respondents stated that the BSE Response was as timely as could be expected. Also, producers did acknowledge that governments attempted to tailor programs to the evolving crisis and to the needs of different producers along the value chain. Case study participants praised the support they received from governments, especially local provincial agriculture representatives.

About 40% of producers in the survey expressed satisfaction with the range of programs developed, the efforts of government to re-open the border, and the overall response of government. The highest satisfaction was with the Fed Cattle Set-Aside program, which received an overall satisfaction rating of 62%.

In designing and delivering the industry repositioning programs, AAFC took advantage of existing program terms and conditions, teams and experience, and integrated the delivery of the programs within various Chapters of the Agricultural Policy Framework. Experts on program development and delivery, sector analysis, trade policy, and business risk management policy and programs were brought together in both formal and informal structures to oversee the implementation of AAFC's BSE programs, to maximize the use of existing expertise and ensure a centralized and coordinated response at the federal level. The Ruminant Slaughter Loan Loss Reserve (RSLLR) program was delivered by the Financial Guarantee Programs Division, which delivers other guarantee programs such as the *Farm Improvement and Marketing Cooperatives Act* (FIMCLA), and has experience working with Farm Credit Canada (FCC) and financial institutions such as banks and caisses populaires.

The Ruminant Slaughter Facility Assessment Assistance (RSFAA) program and the Ruminant Slaughter Equity Assessment (RSEA) programs were both delivered through the Renewal Division, and the RSFAA was designed to complement the Planning and Assessment for Value-Added Enterprises (PAVE) Program. In addition, AAFC signed a Contribution Agreement with FCC to assist in delivering the RSEA program.

The Market Development Programs were delivered through the Canadian Agriculture and Food International (CAFI) Secretariat, and several of the programs (Genetic Marketing Program, Other Ruminants Market Development) used the terms and conditions for the CAFI Program.

The tracking and tracing programs complemented AAFC's efforts through the Food Safety and Quality (FSQ) Chapter of the Agricultural Policy Framework, which aimed to facilitate industry momentum in developing and implementing government-recognized food safety and food quality process-controls/systems throughout the entire food chain.

Key informants stated that consultations between federal and provincial governments started immediately. Provincial governments began consultations with industry associations immediately, especially in the large producing provinces (Alberta and Saskatchewan), followed soon after by federal-provincial-industry consultations. Key informants uniformly stressed that there is little doubt that the response by government was quick.

Case study participants praised the support they received from governments, especially local provincial agriculture representatives. Producers appreciated the time spent by government representatives in responding to questions.

In conclusion, AAFC's response to the BSE crisis was timely for producers. Governments worked together cooperatively and productively with industry towards introducing balanced programming across Canada. AAFC officials actively consulted with provinces and industry, and provided support to the diplomatic effort to re-open the border.

3.3.2 Were any industry sectors not supported that should have been?

Industry sustaining programming under the BSE response primarily addressed beef supply chain members. Other supply chain members (sheep, bison, goats, alpacas, and llamas) were addressed to varying degrees. Industry sustaining programs targeted the sectors that were directly affected by the closure. Some ruminant producers other than cattle producers believed that their concerns received less priority than the cattle sector. In the end, the federal response was shaped in large measure by materiality – the cattle component comprised the largest share of ruminants, and policy makers chose to focus on this sector.

While the dairy industry received assistance from the BSE programs, the crisis did not significantly affect these producers. For most, only 10% of their revenue was derived from cull cows and 90% from dairy. As a result, BSE support was less relevant for dairy farms.

In terms of the industry repositioning programs, these were targeted at all ruminants and not just the cattle sectors. The slaughter assistance programs were targeted to support the construction or expansion of federally-inspected slaughter facilities. Some interviewees suggested that the programs to increase slaughter capacity should have been expanded to include not only federally-licensed facilities, but also provincially-licensed facilities. They indicated that it can be difficult for small-capacity facilities to meet CFIA regulations, in order to become federally-inspected facilities. Interviewees also commented on the fact that during the height of the crisis, when the US border remained closed, provincially-licensed plants assisted some producers in slaughtering animals locally. This was seen as a potential strategy for managing a future crisis in the industry, through the creation of increased capacity at the local level.

3.3.3 What performance monitoring / reporting have programs been conducting, and is there a need to refine these activities?

For the industry sustaining programs, performance information that would have facilitated an analysis of who benefited and by how much across all industry sustaining programs, was limited due to differing and inconsistent data definitions and collection systems used to track producers and their participation in various federal and provincial programs.

For the industry repositioning programs, the intended long-term impacts were not well-defined, and no system was put in place for measuring or tracking the long-term performance of these programs. In some cases, there were no indicators and targets to facilitate performance monitoring. In many cases, the performance measures that were identified in program contribution agreements were activity and not outcome-based. In addition, not all programs were formally required to maintain databases on program applicants and/or projects, affecting the availability of information to support performance monitoring and reporting.

There were varying performance reporting requirements for the programs to expand slaughter capacity. The performance data that was collected reflected a tabulation of program outputs, as opposed to an assessment of outputs against the achievement of program outcomes. For example:

- Under the RSLLR program, lenders were responsible for reporting information to AAFC pertaining to loans, including the application and project plan or business plan from the borrower. These documents were to include, at a minimum, the name of the borrower and, if appropriate, the name of the parent company; a business plan; the names and addresses of current shareholders; the current and planned slaughter capacity; a list of proposed expenditures; the expected cash requirements for the project with expected timing of needs; details on sources of financing; expected project start and completion dates; and pro forma balance sheets and income statements. For the RSEA Program, facilities were required to report on the progress of plant construction, operational status, and number of animals slaughtered. All of the above represent output data, not information on outcomes.
- There were no reporting requirements whatsoever for the RSFAA program.

In a crisis situation, there is pressure to focus on the achievement of short-term activities and outputs, and not long-term outcomes. In developing a readiness response for future crises in the agriculture sector, there is value in giving thought to the associated performance measures and expected immediate, intermediate and end outcomes. AAFC's Office of Audit and Evaluation is currently developing some examples of immediate, intermediate and end outcomes, and associated indicators and targets that could be used to support performance measures for future disaster-related programming. To facilitate effective program delivery and performance monitoring and reporting of future programs in a crisis situation, AAFC should also ensure clarity and consistency in how data is defined and performance information is collected.

3.4 Cost-Effectiveness

3.4.1 What was the cost to AAFC of responding to the BSE crisis?

In total, the federal industry sustaining programs allocated \$2.0 billion to support the ruminant livestock industry during the BSE crisis. Provincial governments allocated an additional \$243.8 million for the industry sustaining programs (a list of provincial BSE-

related programs is included in Annex G). The federal government budgeted an additional \$131.8 million for industry repositioning programs, bringing total federal and provincial budgeted expenditures related to the BSE response to approximately \$2.4 billion.

Government support averted the most serious financial impacts of the BSE crisis and allowed most producers to sustain their operations (at least those that wanted to and were not about to retire). BSE program payments were a significant source of net farm income that partially offset dramatic declines in farm income. As is the case with disaster-relief type programs, government program payments are only intended to compensate a portion of the financial losses incurred by producers. Given the severity of the BSE crisis, government program payments were not sufficient on their own, in most cases, to enable producers to manage the financial crisis resulting from the border closure, and many producers experienced long-term reductions in their net worth. Those that survived the crisis adopted a variety of strategies besides participation in government programs to maintain their operations, including loan financing (47%), increasing off-farm work (42%), selling business assets, or borrowing money from family.

3.4.2 Was there unnecessary overlap or duplication among the programs offered?

The AAFC response to the BSE crisis included both federal-provincial price support programs (BSE Recovery Program, Cull Animal Program, Feeder Cattle Set-Aside, and Fed Cattle Set-Aside) and federal-only income support programs (Direct Payments under TISP and FIPP, and Advance Payments under CAIS).

The price support programs were administered by participating provincial governments or by AAFC in provinces that did not participate in these programs. In some provinces, parallel provincial programs were implemented with similar eligibility criteria. These programs were animal-specific; that is: payment was normally contingent upon the producer providing evidence of having sold their animals for slaughter within the eligibility period. While there was a risk of duplicate payments being made under these programs, several factors contributed to minimizing these risks:

- ▶ In most provinces, federal-provincial and provincial programs were both delivered by provincial governments, in some cases using a common database
- ▶ For most programs, individual animals were required to have identification tags and sales receipts had to include the animal identification number
- ▶ There was some temporal spacing of programs.

In provinces that did not participate in individual AAFC price-support programs, producers were normally eligible for payments under a corresponding provincial program. In these provinces, the payment under the AAFC program was only 60% of what it would have been if the program had been cost-shared.

Nevertheless, there was not complete uniformity even within a single province, in some cases, with regard to how producers and animals were identified. Consequently, it is not possible to provide definitive information as to who benefited and by how much or to conclude definitively that there were no cases of duplicate payments.

Duplication or overlap was not an issue for the federal-only income support programs. These programs (TISP and FIPP) involved one-time payments based on the average net sales data held by AAFC for a four year period or on declining net margins (CAIS data).

Industry consultations, such as the APF/Beef Industry Roundtable and the Canadian Cattlemen's Association, proved to be important assets in developing the response. These groups worked with both federal and provincial officials to develop national and regional programming, and government key informants remarked that industry's insight and cooperation was invaluable in developing the response.

Since a large number of the programs were animal specific, this reduced the possibility of paying twice for the same animal. Key informants and case study participants confirmed that programs did track the alignment of payment and animals. Most key informants believed that the programs did not overlap, and any apparent duplication reflected judgments by the provinces in supplementing the needs of the industry in that province.

In conclusion, there was good FPT and industry collaboration, and no perceived overlap and duplication with other AAFC programs, or with provincial or territorial BSE-related programs. However, due to the differing and inconsistent federal and provincial data definitions and collection systems used to track producers and their participation in various programs, governments cannot confirm with 100% certainty who benefited and by how much across all industry sustaining programs. Furthermore, it is not possible to conclude definitively that there were no cases of duplicate payments to program recipients.

4. Conclusions and Lessons Learned

Conclusions

The federal government reacted promptly to the BSE crisis by implementing different programs as the situation unfolded, and the sequence of responses on the part of AAFC appears to have been appropriate. The industry sustaining and industry repositioning programs were relevant to the needs of producers and processors at the time. It was not known how long the US border would be closed. In this environment, the focus in the short-term was on maintaining orderly markets and some normality to prices, by supporting the flow of animals to slaughter. Once it became evident that it might be some time before the border would reopen to live cattle, the

focus of government shifted from shorter term market stabilization and compensating producers for the income losses resulting from price declines, to helping the industry reposition itself and enhancing Canada's traceability system.

Both the industry sustaining and industry repositioning programs were aligned with federal government priorities, and with AAFC's Strategic Outcome of Security of the Food System. The 2004 Speech from the Throne highlighted BSE and the importance the Government attached to obtaining more reliable access to US markets, while Budgets 2004 and 2005 acknowledged the negative impact of BSE on the Canadian economy and allocated funding to among other things, help farmers address the difficulties arising from the BSE crisis. The BSE-response related programs aligned with the program activities for Business Risk Management, Food Safety and Food Quality, and Markets and International.

The suite of BSE price support and set-aside programs was successful in preventing the flooding of slaughter markets with cattle and, consequently, in moderating price decreases to producers. In broad terms, the BSE industry sustaining programs achieved their main objectives. Namely, they helped to sustain the industry through the crisis; responded to the drop in market price and demand for cattle; compensated producers for financial losses and provided income support; and avoided a mass slaughter of the cattle herd.

The design of the BSE industry sustaining programs was predicated on a discrete supply chain. Due to the structure of the beef and cattle industry, some vertically integrated producers were able to obtain support from multiple elements of the BSE programs. However, these instances were rare and the total financial support to individual producers remained relatively low given the scale of operations. More significantly, processors who were vertically integrated backwards into production (e.g., feedlots) benefited from the support to expand the domestic slaughter capacity, the support provided to feedlots and the price reductions for live cattle. This reflects the challenge of designing programs that target industry participants that operate at specific points in the supply chain, without unduly benefiting entities that are vertically integrated.

In hindsight, subsidies to expand federally-inspected slaughter capacity to respond to the BSE crisis proved unnecessary, given that Canada was successful in getting the US border re-opened to exports of live cattle under thirty months, within a period of two years. It should be noted that AAFC did suspend or cancel the slaughter capacity programs, given that sufficient slaughter capacity had been (or was planned to be) established. Government officials could not take the risk of assuming that the US border would re-open to exports of live cattle under thirty months within a little over two years, reducing the need to expand domestic slaughter capacity. This is the inevitable cost of the need to move quickly to address a crisis situation, in an unpredictable environment.

At the time of this evaluation, industry repositioning programs were making progress towards their intended outcomes. The programs were delivered

efficiently and effectively, taking advantage of existing AAFC program terms and conditions, teams and experience. A dedicated team of AAFC program experts from across the department was brought together to oversee the implementation of AAFC's BSE programs to ensure a centralized and coordinated response. AAFC officials proactively supported the diplomatic effort to re-open the border as quickly as possible, while at the same time implementing programs to develop new markets to reduce Canada's future reliance on the US. Existing terms and conditions for the CAFI program were used to deliver several industry repositioning programs.

AAFC's response to the BSE crisis was timely for producers. The border closed on May 20, 2003 and the first funds started to flow in July 2003 through Phase I of the BSE Recovery Program (Slaughter Element). Governments worked together cooperatively and productively towards introducing balanced programming across Canada. AAFC officials actively consulted with provinces and industry, and provided support to the diplomatic effort to re-open the border. Industry sustaining programs primarily addressed beef supply chain members (as opposed to other ruminants, such as sheep and bison) given the materiality of this sector, while the industry repositioning programs targeted all ruminants.

For the industry sustaining programs, performance information that would have facilitated an analysis of who benefited and by how much across all industry sustaining programs, was limited due to differing and inconsistent data definitions and collection systems used to track producers and their participation in various federal and provincial programs. As a result, it is impossible to conclude definitively that there were no cases of duplicate payments made to program recipients from federal and provincial programs.

For the industry repositioning programs, the intended long-term impacts were not well-defined at the outset, and no system was put in place for measuring or tracking the long-term performance of these programs. In some cases, there were no indicators and targets to facilitate performance monitoring. In many cases, the performance measures that were identified in program contribution agreements were activity and not outcome-based. In addition, not all programs were formally required to maintain databases on program applicants and/or projects, affecting the availability of information to support performance monitoring and reporting. AAFC's Office of Audit and Evaluation is currently developing some examples of immediate, intermediate and end outcomes, and associated indicators and targets that could be used to support performance measures for future disaster-related programming.

Government support averted the most serious financial impacts of the BSE crisis and allowed most producers to sustain their operations (at least those that wanted to and were not about to retire). BSE program payments were a significant source of net farm income that partially offset dramatic declines in farm income.

Lessons Learned

The following lessons learned from the experience with BSE-response related programs may serve to inform the design of future disaster-related initiatives in the agricultural sector.

1. Given that it is not possible to predict when the agricultural sector will be confronted with another disaster of the magnitude of BSE, it is critical to maintain knowledge of current market structures. There is also value in simulating a range of possible demand and supply side crises, in order to develop a readiness response, which includes: establishing appropriate baselines for the sector; developing a list of internal and external experts with knowledge of how to respond to a crisis situation in the agricultural sector; and a sense of organizational structure required to manage the crisis.
2. In a crisis situation, there is pressure to focus on the achievement of short-term activities and outputs, and not long-term outcomes. In developing a readiness response for future crises in the agriculture sector, there is value in giving some thought to the associated performance measures and expected immediate, intermediate and end outcomes. Where possible, pre-planning expected outcomes, indicators and targets will facilitate the speed with which disaster-related programs can be launched, and will ensure that effective measures are in place to report on performance.
3. In a crisis situation, there are trade-offs between maintaining tight management controls and facilitating the speed of program implementation through the use of multiple delivery agents, including provinces and territories. To facilitate effective program delivery (i.e. reduced potential for overlap and duplication of program payments) and performance monitoring and reporting, AAFC should ensure clarity and consistency in how data is defined and performance information is collected.

Annex A

Producer Survey Explanation of Design

The survey of program participants provides insight into producers' experiences with the industry sustaining programs and the impact of the programs on the structure of their operation, their management decision, and their financial situation. The national survey of producers was conducted in all provinces (excluding the territories and Quebec) addressed the four federal-provincial programs: the BSE Recovery Program – Slaughter Element, the Cull Animal Program (CAP), the Fed Cattle Set-Aside Program (FED), and the Feeder Calf Set-Aside Program (FEE). As this survey was conducted in late 2006 and early 2007, and some of the programs that were included in the survey began and ended in 2003, the questionnaire did not include questions about specific programs. The planning study determined through a pilot test, that the producers would not be likely to recall specific details about individual programs. Given this, the survey focused on the collective group of programs that were available to the producers.

Quebec conducted a mail survey of a sample of producers receiving their programming. This questionnaire covered similar questions as the telephone survey, and the working group decided that to minimize respondent fatigue, these results would be incorporated into the survey results as appropriate. This report presents the results of the producer survey for all provinces but Quebec and then for Quebec separately.³

The consultant drafted a questionnaire for the telephone survey in consultation with the BSE Advisory Committee, and in alignment with the matrix of issues, questions, indicators, and data sources for the evaluation. Although the provinces had the opportunity to add province-specific questions to the questionnaire for their own evaluation purposes, only Alberta took advantage of this option.

To ensure the statistical validity of the results, the survey aimed to obtain 214 completions in each province and 1,500 overall. This yields a theoretical error rate of 6.83% per province and 2.58% nationally. Given the relatively small size of the beef industry in Atlantic Canada (as shown in Table 1), 214 complete responses were targeted for that region as a whole.

³ Combining a telephone and mail-based responses poses some challenges. The differential response mode and variation in questions to meet the two formats introduces unknown biases. However, the fact that Quebec was executing a survey at the same time offered an important resource saving. In addition, the two questionnaires align on key questions. A separate technical report presents the details results from the survey of producers.

Table 1: Canadian beef sector		
Province	Number of farm operators (Cattle) ¹	
	n	% of Canada
Canada	97,505	-
Atlantic	2,705	3%
Quebec ³	7,060	7%
Ontario	19,285	20%
Manitoba	10,215	10%
Saskatchewan	16,680	17%
Alberta	33,975	35%
British Columbia	7,580	8%
Note: Totals may not sum due to rounding. Sources: ¹ Statistics Canada. 2001 Census of Agriculture. Retrieved on May 16, 2006 from http://www40.statcan.ca/l01/cst01/agrc22a.htm ² Statistics Canada. Cattle Statistics. 2006, vol. 5 no. 1 ³ Quebec conducted a separate mailed survey of its producer population, selected results of which appear in the discussion below.		

The sample frame for the survey used province-provided databases of program participants for the BSE Recovery Program – the Slaughter Element, the Cull Animal Program, the Fed Cattle Set-Aside Program, and the Feeder Calf Set-Aside Program. The fields included applicant name, address, telephone number, and payments received. The consultant combined the individual databases into a single database, which included one row of data per producer and identified the combination of BSE programs in which a producer participated.

For each province, the consultant randomly selected approximately 500 producers to invite to participate in the survey. Where possible, producers who had participated in more than one program were the first selected for inclusion in the sample frame. ⁴

Prior to data collection, the consultant pre-tested the questionnaire with 10 producers in Nova Scotia between October 24, 2006 and October 27, 2006. In addition to responding to the questionnaire, interviewers asked producers whether any of the questions were unclear, difficult to answer, or failed to cover important issues. Based on the pre-test results, the consultant simplified some of the time-sensitive questions and removed several less important questions to reduce the overall length of the questionnaire.

About one week before interviewing, potential respondents received a bilingual letter from AAFC, advising them of the survey. Letters included a toll-free telephone number to support questions about the survey or to opt-out of the survey; 45 producers called to decline participation in the survey.

⁴ Note that Saskatchewan had conducted a survey of its participants and these respondents were excluded from this survey. Sufficient numbers of unsurveyed respondents remained for this evaluation.

Interviewing occurred between November 13, 2006 and January 20, 2007. The survey was offered in both official languages, and telephone calls were made during both the day and the evening in order to maximize the likelihood of reaching producers. Excluding Quebec, 1,288 completes were obtained. With the addition of the Quebec responses, the final sample was 1,848.

Annex B

AAFC Econometric Analysis of the BSE Response

AAFC has prepared an econometric analysis (Economic Sectoral Analysis) of the impact of the border closure due to BSE and of the consequent support programs provided to the cattle and beef industry. The estimates rest on two annual models:

- ▶ *Aglink* is a dynamic supply-demand model of world agriculture, developed by the OECD Secretariat in close co-operation with member countries and the FAO. It is a medium-term policy evaluation model that uses member country estimates of demand and supply elasticities (price, income, etc.), as well as estimates of policy responses and institution factors. The overall design of the model focuses particular attention on the potential influence of agricultural policy on agricultural markets in the medium term. *Aglink* is used to capture the impact on the US prices resulting from the Japanese and Korean market to a North American beef.
- ▶ Agriculture and Agri-Canada Canada has also developed its own model, the Food and Agriculture Regional Model (*FARM*). This model allows estimation of specific impacts upon the Canadian agricultural market and is much more detailed than in the *Aglink* model.

Both *Aglink* and *FARM* use a series of equations that express the demand and supply of various agricultural commodities as a function of independent variables such as prices, income, and other factors. These models use estimates of the demand and supply for various agricultural commodities, constrained by identities designed to ensure the equality of total quantities demanded and supplied. Embedded in the models are various institutional assumptions expressed as constraints and identities.

Estimating the BSE impact involved two steps:

- ▶ The baseline scenario, which is the historical data, represents the situation as it actually occurred in Canada :
 - May 2003: First BSE case in Canada (complete trade embargo)
 - September 2003: Under thirty month (UTM) beef cuts allowed in the US
 - December 2003: First case in the US
 - January 2004: Complete trade embargo of US beef in key Asian markets
 - July 2005: End of the trade embargo on UTM live cattle to the US
 - Assumed in January 2007: North American beef exports in Asia return toward historical levels
 - Assumed in January 2008: End of embargo against over thirty months (OTM) beef and cattle to the US.

- ▶ Then a "no BSE scenario" was simulated. This scenario simulates what would have happened from 2003 to 2007 in the absence of BSE in Canada and in the United States and with no border closure and free trade as it was before the BSE cases.

The impact of BSE in Canada is the difference between the historical data (except for 2007 which is a simulation) and what would have happened without BSE. The simulations examine the impacts in the Japanese, Korean and US markets but for this evaluation we present only the impact on the US market and on domestic prices, exports, and cash receipts of producers.

Annex C

UK Government BSE Measures

Between 1988 and 1994 the UK provided three compensation schemes:

- ▶ *August 1988 to February, 14, 1990* — For known or suspected cases of BSE, farmers received the lesser of 50% of the animal's market value or an adjusted average market price for all cattle sold over a one-month period and two months prior to the affected animal's slaughter. Compensation was 100% if a post-mortem showed the animal was not infected;
- ▶ *February 14, 1990 to April 1994* — For known or suspected cases, farmers received the lesser of 100% of the animal's market value or the average market price for all cattle sold in the two months prior to the affected animal's slaughter;
- ▶ *After April 1, 1994* – The average price was replaced with an indicative price which was “a weighted average that distinguished between cattle less than seven years old when valued for slaughter as BSE suspects, and those aged seven years or more when valued.”⁵

The majority of the BSE compensation payments occurred after March 1996, due to measures to control and eradicate the disease, lost markets from export bans, and decreased domestic consumption. Total costs for the various BSE measures taken between 1996/97 and 2005/06 are close to £6 billion. Of this amount, the greatest proportion occurred in the first two years after March 1996 (Figure 1).

⁵ Phillips et al. Volume 10, p. 16.

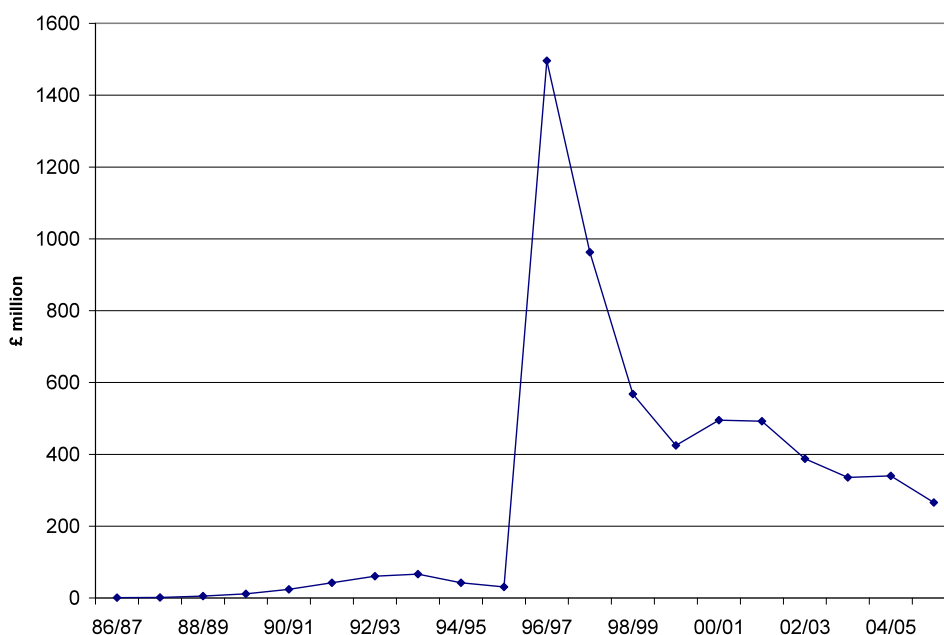


Figure 1: UK government costs of BSE measures, expenditures from 1986/87 to 2005/06
Source: Adapted from Department for Environment, Food and Rural Affairs (October 6, 2000), and Phillips et al. Volume 10.

Other measures taken after March 1996 involving removal of cattle from the production system and compensation to producers included:

- ▶ The Over-Thirty-Month Scheme (OTMS), introduced in response to the March 1996 banning of over-thirty-month cattle from entering the food chain
- ▶ The Calf Processing Aid Scheme (CPAS), provided compensation for the slaughter of male calves under 20 days old to address the loss of continental markets for calves.⁶
- ▶ The Selective Cull Measure removed those cattle from the system most at risk for BSE.

Other measures included special payments to farmers and the slaughter industry, with these mainly being one-time payments, or top-ups to the European Union's Common Agricultural Policy (CAP) schemes. Compensation to producers have continued for slaughter of suspected cases of BSE. The latest compensation scheme, introduced March 1, 2006, is based on monthly average market prices for a range of cattle categories.

⁶ The Scottish Office, February 10, 1999.

Annex D

Number of BSE Cases Worldwide

To date, there have been 190,007 confirmed cases of BSE worldwide, of which the UK accounts for 184,453 cases, or 97.1%. Next to the UK and Ireland, the highest incidence of BSE has been in Portugal, France, and Spain, although the numbers in these countries were nowhere near that of the United Kingdom (see table below).

BSE cases worldwide, as of October 2006		
Country	Total BSE cases	% of world total
United Kingdom	184,453	97.08%
Ireland	1,583	0.83%
Portugal	996	0.52%
France	976	0.51%
Spain	654	0.34%
Switzerland	462	0.24%
Germany	372	0.20%
Italy	134	0.07%
Belgium	131	0.07%
Netherlands	77	0.04%
Poland	49	0.03%
Czech Republic	24	0.01%
Slovakia	23	0.01%
Denmark	14	0.01%
Other Europe	17	0.01%
Total Europe	189,965	99.98%
Japan	29	0.02%
<i>Canada</i>	<i>10</i>	<i>0.01%</i>
United States	2	0.00%
Israel	1	0.00%
Total worldwide	190,007	100.00%
<i>Source: World Organisation for Animal Health (2003a&b)</i>		

Annex E

Understanding the Supply Chain in Beef Markets

A model of the beef cycle and the programming introduced in response to the BSE crisis appears in Figure 3.⁷

- ▶ **Seed stock** producers provide the breeding stock (mainly bulls) for cow/calf operations.⁸
- ▶ **Cow/calf operators** produce annual supplies of feeder calves. These calves are weaned at about five to six months of age and weigh about 225 kilograms.⁹
- ▶ **Backgrounding** begins after weaning and can occur at **cow/calf** operations or at backgrounding or stocker operations, which purchase **feeder calves** specifically to feed them up to the finishing phase. Calves are backgrounded on a forage-based diet for about 10 months or until they weigh about 400 kilograms.¹⁰
- ▶ **Feedlots** finish cattle. These animals are initially fed a forage diet, that is then progressively supplemented with grains until 90% of the diet is grain-based.¹¹ Cattle are sold to packers at 15 to 24 months of age and have a finished weight of about 550 to 600 kilograms.¹² The result is a "fed" cow that will be used for prime cuts of meat.
- ▶ **Packers** slaughter animals into large cuts that flow to processors.
- ▶ **Processors** prepare a variety of meat products for the retail level. Often, packers and processors are vertically integrated; the terms "processor" and "packer" appear interchangeable and denote firms that process live animals into various products for the retail level.

⁷ This is adapted from Shroeder Tom, (2003) "Business Plan – Enhancing Canadian Beef Industry Value Chain Alignment," completed for CanFax. Downloaded April 19, 2006 from http://www.canfax.ca/beef_supply/projects.htm

⁸ Canadian Beef Breeds Council. *Canadian purebred beef cattle*. Retrieved April 24, 2006 from www.canadianbeefbreeds.com/CBB_book.pdf. Note that a small number of producers also sell genetic material (bull semen) which also was banned.

⁹ Farmissues.com. *You were asking about....beef*. Retrieved April 18, 2006 from www.farmissues.com/mediaPortal/beef/beef_basics.asp.

¹⁰ Farmissues.com.

¹¹ Beef information centre. *Canada's beef cattle industry*. Retrieved April 18, 2006 from www.beefinfo.org.

¹² Farmissues.com.

Note: Cull cows are animals that have reached the end of their productive lives, either as breeders or in dairy production. They are typically destined for the lower grade of beef such as hamburger.

Within Figure 3, financial flows appear as solid lines and commodity flows as dashed lines. Each arrowhead represents a point at which price/quantity relationships may be traced over time. The points in the beef cycle will enable the evaluation to describe the unfolding of the crisis in terms of price adjustments (reductions), demand declines, and stock increases that characterized the crisis. BSE program elements appear in the boxes and link to the relevant points of the value chain.

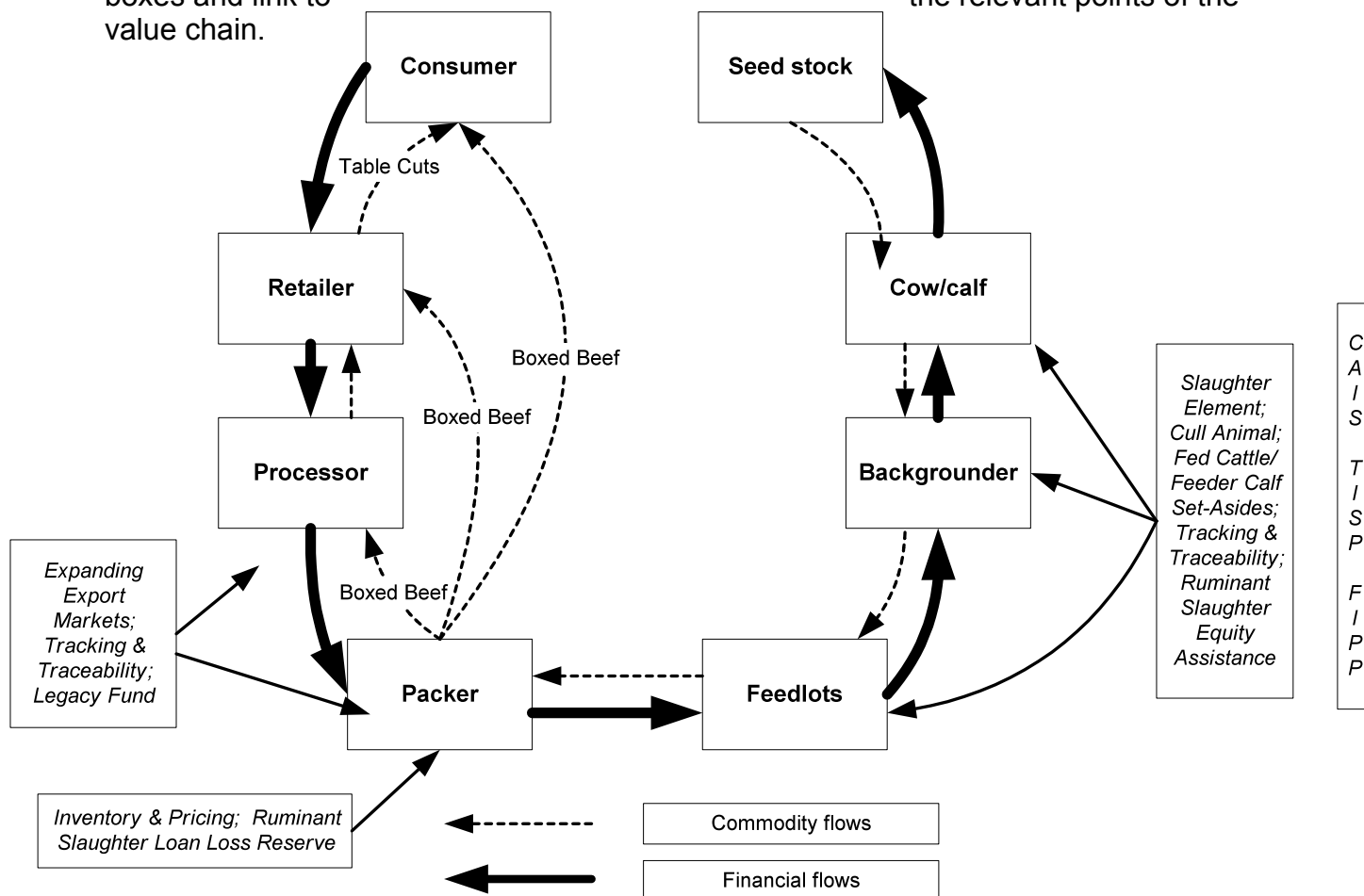


Figure 3: Supply chain model for beef industry

Figure 4 shows the disposition of cattle and beef in Canada (2002), with values approximate to show magnitudes of supply, and Table 6 shows the disposition of beef in Canada 2001-2005. Note that during the border closure, Canada continued to import a fraction of its domestic consumption of beef, although at a lower level than in 2002.

Table 6: Supply and disposition of red meat ('000 tonnes)						
Year	Initial stock	Production	Imports	Total supply	Exports	End stock
2001	26	1220	310	1550	570	32
2002	32	1260	310	1600	610	31
2003	31	1140	273	1450	400	45
2004	45	1450	110	1610	590	40
2005	10	1480	130	1650	580	38

Source: Statistics Canada, *Cattle Statistics* 2007 (cat 23-012)

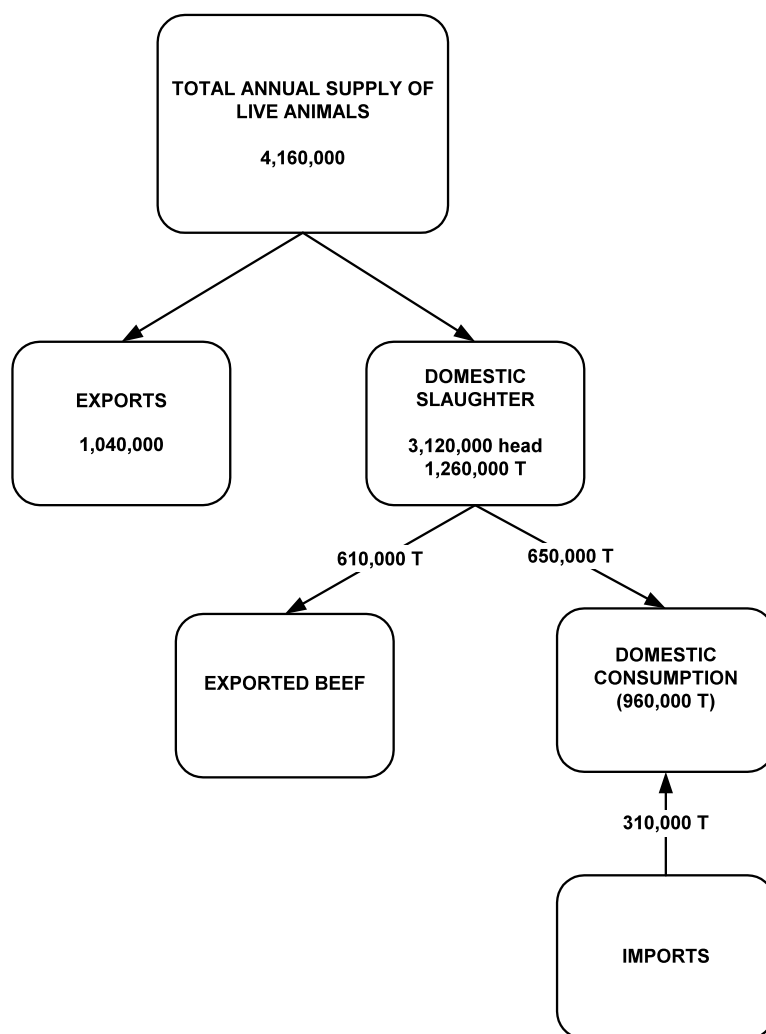


Figure 4: Disposition of cattle and red meat (2002)

Annex F

BSE Program Profiles Industry Sustaining Programs Programs to Sustain Orderly Markets and Support Prices

The federal government offered five programs to maintain an orderly flow of animals to slaughter or divert the flow from export:

- ▶ **BSE Recovery Program: Phase I – Slaughter Element (BSE):** The objective of this program was to encourage the Canadian slaughter of Canadian cattle inventories for consumption in Canada. The slaughter element provided producers of fed cattle, bulls, veal calves, and other eligible ruminants, with a price-deficiency payment, based on a sliding scale, for livestock (owned as of May 20, 2003) sold for slaughter between June 1, 2003 and August 31, 2003. (This was extended to September 5, 2003 for Ontario, due to a power outage on August 14.). This program also included a price-deficiency payment for cows that were slaughtered. Total spending was \$471.6 million.
- ▶ **BSE Recovery Program: Phase I - Inventory and Pricing Element** was designed to increase slaughter by assisting processing plants to market the slowest selling items in inventory and offer higher prices for livestock they purchased.¹³ The challenge for processors was maintaining slaughter volumes when they could not market all of the beef being produced because of the loss of key export markets. Providing an incentive to turn over inventory increased kills and reduced the backlog of fed cattle. The program could provide federally licensed packing plants with a per-head payment for eligible livestock slaughtered. It based payments for each class of livestock on a weekly multiplication of the estimated value of by-products by a ratio of the market price and a reference price. All payments were accrued, approved, or paid by March 31, 2004.
- ▶ **BSE Recovery Program: Phase II - Cull Animal Program (CAP):** The objectives of this program were to delay the marketing of cull animals until there was sufficient Canadian slaughter to process these older animals and discourage on-farm cattle slaughter. It provided producers with a flat-rate payment of \$320 per eligible animal; producers could receive payments for animals over the age of 30 months that would normally be subject to culling – 8% for beef breeding herds and 16% for dairy breeding herds. Total spending was \$106.2 million.
- ▶ **BSE Recovery Program: Phase III - Fed Cattle Set-Aside Program (FED):** The main objective of this program was to achieve a better balance between the supply

¹³ Canada-Manitoba Bovine Spongiform Encephalopathy Recovery Program. Inventory and Pricing Element. Retrieved on May 9, 2006 from <http://www.gov.mb.ca/agriculture/livestock/anhealth/pdf/jaa06s25a.pdf>

of market-ready cattle and domestic slaughter capacity. Using national weekly auctions, where producers placed bids on the per day payment they would be willing to accept in order to set aside some of their fed cattle, the program aimed to delay the marketing of some market-ready cattle until the slaughter capacity more closely matched the supply of live animals. At these auctions, producers placed bids to set aside eligible cattle for a period of 91 days. Total spending was \$49.0 million.

- ▶ **BSE Recovery Program: Phase III - Feeder Calf Set-Aside Program (FEE):** The main objective of this program was to encourage cow-calf and other beef producers to retain some calves born in 2004, delaying slaughter until there was adequate slaughter capacity. Producers agreed to set aside their calves until either October 1, 2005 or January 1, 2006. They received \$160 for October releases and \$200 for January releases. Alberta designated a release date of October 1, 2005 and topped up the producer payment to \$200 per head. Total spending was \$203.5 million.

Programs to Compensate Producers for Revenue Decline

The border closing occurred just as the Canadian Agricultural Income Stabilization (CAIS) program was being implemented. Many producers had not enrolled for the 2003 crop year by May 2003 when the border was closed; so the federal government introduced a series of ad hoc programs to provide special financial support to cattle producers and other farmers.

- ▶ **Transitional Industry Support Program (TISP) – Direct Payment:** The Direct Payment component of the Transitional Industry Support Program (TISP) began on March 29, 2004 and ended on October 1, 2004. The objectives were to:
 - Provide income assistance to producers who faced historic financial challenges
 - Bridge the cattle industry into the new Canadian Agricultural Income Stabilization (CAIS) Program

It should be noted that TISP had broader objectives than supporting the cattle sector through the BSE crisis. TISP provided direct payments based on the number of eligible cattle and other ruminants owned by producers. Producers received a direct payment of up to \$80 per eligible bovine animal in inventory as of December 23, 2004 (based on the average eligible net sales (ENS) for 1998 to 2002. Payments for other ruminants affected by the border closure varied from \$16 to \$80, depending on species. Eligible ruminants included all bovine animals except mature bulls and cows.

The federal government allocated a total of \$685 million to the program, including \$663 million for cattle producers, \$15 million for producers of other ruminants, and \$7 million for administration). It ultimately issued \$598 million in direct payments.¹⁴ This was not a federal-provincial cost-shared program.

¹⁴ TISP "one-pager."

- ▶ **The Farm Income Payment Program (FIPP)** began June 1, 2005 and ended March 31, 2006. Its objective was to assist producers to stay in business during a period of historically low incomes. It should be noted that FIPP had broader objectives than supporting the cattle sector through the BSE crisis. The program provided a per-head direct payment to producers of cattle and other ruminants, excluding breeding bulls and cows, based on their December 23, 2003 livestock inventory. The estimated per-head payment amount for cattle was \$25, and the estimated payment for other ruminants was \$17.

The eligibility criteria for FIPP were the same as TISP's, except that producers had to report farm income for 2002 and 2003. Producers participating in TISP automatically received FIPP payments.

Federal funding allocated to the FIPP Direct Payment component was \$155 million, including \$138 million for cattle producers and \$17 million for producers of other ruminants.¹⁵ Actual expenditures were \$151.3 million in direct payments to producers.¹⁶ This was not a federal-provincial cost-shared program.

- ▶ **The Special Interim Payment component of CAIS** was introduced September 1, 2004 and ended March 31, 2005. The objectives were to:
 - Address producers' immediate cash flow problems
 - Encourage re-configuration of the industry's livestock composition.

The program provided cow-calf producers with a declining margin with a \$100 per-head payment (a proxy for the decline in margin, based on the number of breeding animals they had). These payments were equivalent to the amount producers would have received as an interim payment under the program. The program deducted the special payment from producers' final payments in 2005. To be eligible, producers had to have participated in the 2004 CAIS program.

Federal funding for the CAIS special payment was included in the \$388 million allocated to Phase III of the BSE Recovery Program.¹⁷ CAIS made \$145 million in special interim payments to producers.¹⁸ This was not a federal-provincial cost-shared program.

Industry Repositioning Programs

To help reposition the Canadian ruminant livestock sector as an exporter of beef and other ruminant products, AAFC implemented repositioning programs: programs to increase slaughter capacity, programs to improve tracking and tracing, and market development programs.

¹⁵ TB Submission. March 2005.

¹⁶ FIPP "one-pager."

¹⁷ TB Submission. September 2004.

¹⁸ AAFC Summary of Program Payments. November 2005.

Programs to Increase Slaughter Capacity

The programs designed to increase slaughter capacity in the longer-term were intended to reduce Canada's vulnerability to trade restrictions and contribute to greater value-added processing opportunities for the Canadian livestock industry.

- The **Ruminant Slaughter Loan Loss Reserve (RSLLR) Program** to reduce the risk to lenders associated with providing capital loans for the construction of new or expanded small and medium-sized slaughter facilities. AAFC provides lenders with loan loss reserves that would cover up to 90% of loan losses.
- The **Ruminant Slaughter Facility Assessment Assistance (RSFAA)** assisted processors to determine the feasibility of establishing or expanding federally-inspected slaughter facilities. AAFC provided 50% of the eligible costs for technical and professional advice from qualified consultants for feasibility studies, business plans, marketing plans, and other non-capital or non-legal costs.
- The **Ruminant Slaughter Equity Assessment (RSEA)** assisted in leveraging processor investment in the expansion of federally regulated and inspected slaughter facilities. AAFC contributed up to one-half of a producer's investment in an eligible facility, to a maximum of \$20,000 for each investing producer.

Programs to Improve Tracking and Tracing

The tracking and tracing programs were intended to increase other countries' confidence in Canadian livestock by improving Canada's tracking and tracing system for cattle and other ruminants.

- The **Canadian Livestock Identification Agency (CLIA)** aimed to ensure Canada had an efficient, national animal identification system. AAFC provided the CLIA with funding to develop a self-sustainable operational and financial model and to provide a platform (forum) for discussions and policy development on livestock identification and traceability for animal health emergency management and food safety.
- The **Canadian Cattle Identification Agency (CCIA)** aimed to ensure the Canadian beef industry could track, trace, and eliminate sources of disease and food safety concerns in the Canadian cattle herd. AAFC funded the CCIA to enhance its national cattle identification database by incorporating modules on age verification, premise identification, RFID tag management, animal movement and sighting, etc.
- The **Canadian Radio Frequency Identification (CRFID) Reader Program** aimed to ensure that those in the cattle and bison industry had the equipment needed to fully participate in Canada's tracking and tracing system. AAFC provides 50% of the purchase price of one RFID reader (to a maximum of \$1,000 for hand-held readers and a maximum of \$3,000 for panel readers).

- The **Canadian Integrated Traceability Program (CITP)** was designed to assist industry groups to accelerate the development, implementation, and integration of traceability systems across the Canadian meat and livestock industry. AAFC provided up to 50% of eligible project costs to a normal maximum of \$150,000. Projects had to demonstrate benefits across the value chain to the sector, validate or demonstrate traceability technologies, demonstrate the implementation of animal tracking, or test the systems through the value chain (e.g., tracking or recalls).

Market Development Programs

Market development programs were intended to maximize market opportunities and reduce Canada's reliance on any one single market.

- The **Other Ruminants Market Development (ORMD) Program** aimed to reduce the impact of future border closures by minimizing trade in live animals and developing the capacity of industry associations to undertake significant market development activities. AAFC provided approved applicants with funding for market development activities such as website development, promotional materials, attendance at trade shows, etc.
- The **Genetics Marketing Program (GMP)** aimed to penetrate traditional and non-traditional markets for livestock genetics and develop the capacity within industry associations to undertake significant market development activities. AAFC provided approved applicants with funding for market development activities such as website development, promotional materials, attendance at trade shows, etc.
- The **Sustaining Genetic Quality of Ruminants (SGQR) Program** aimed to maintain Canada's reputation for genetics and ensure the marketability of ruminant genetic products. AAFC provides national breed associations with \$30 per head for animals registered so they could continue purebred animal registration, records of performance, and other genetic improvement tools in order to sell purebreds as markets reopened. The minimum payment per breed association is \$500.
- The **Canadian Cattlemen's Association (CCA) Legacy Fund** aimed to maximize market opportunities and reduce Canada's reliance on any one single market. AAFC provided funding to CCA for international and domestic market development activities for Canadian beef cattle, beef and beef products, and beef cattle genetics.

Annex G

Provincial BSE Programs

BSE provincial programs (2003-2005) - \$243.8 million	
British Columbia	
	BC Steer & Heifer Market Transition
	BC Cull Animal Program
	BC Whole Farm Insurance Program – BSE Initiative
Alberta	
	Fed Cattle Competitive Bid Program
	Fed Cattle Competitive Market Adjustment Program
	Mature Market Animal Transition Program
	Steer and Heifer Market Transition Program
	White Fat Cows and Bulls Market Transition Program
	Alberta BSE Slaughter Market Adjustment Program for Other Ruminants
	Alberta Winter Feed Program for Deer, Elk, Llamas and Alpacas
	Alberta Farm Development Loan Guarantee Program
	Alberta Disaster Assistance Loan Program
	Alberta Stranded Beef Export Container Initiative
	Alberta Beef Product and Market Development Program
	Alberta Beef Product and Market Development Loan Program
	Alberta Food Processor Assistance Initiative Program
Saskatchewan	
	Saskatchewan Cull Animal Program
	Fed Livestock Competitive Market Adjustment Program
	Set-Aside Program
	Saskatchewan BSE Livestock Loan Guarantee
Manitoba	
	Slaughter Deficiency Program
	Manitoba Cull Animal Program
	BSE Feeder Assistance Program
	MACC Agriculture Loan Program
	Made-in-Manitoba Beef Fund
Ontario	
	BSE Recovery Initiative – Set-Aside Program
	BSE Recovery Initiative – Slaughter Component
	Ontario Cull Animal Strategy
	Advanced Ontario Agricultural Payment – Ontario Farm Income Disaster Program
Quebec	
	Programme de soutien à l'industrie bovine suite à l'ESB
	Quebec Cull Animal Program
	Advance on ASRA (Assurance Stablisation des Revenues Agricoles) Program
New Brunswick	
	BSE Recovery Supplement
Prince Edward Island	
	Cattle Marketing Initiative
Nova Scotia	
	Beef Producer Assistance
Source: AAFC and provinces	