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**A Performance Evaluation of the
Beef Industry Development Fund
Final Report
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October 12, 2000**

EXECUTIVE SUMMARY

The Beef Industry Development Fund, (BIDF), is a joint industry, federal and provincial initiative that was established to support innovative projects which would increase the competitiveness of the Canadian beef industry. The BIDF amounted to nearly \$25 million dollars over a period of five years from 1995 to the end of 2000. The initiatives funded by BIDF were primarily targeted to domestic and export market development, research, training and technology.

This paper is the performance measures evaluation of the Beef Industry Development Fund. Performance research management determines how well the recommended actions are being carried out and what benefits in sales and profits are being realized. Performance measurement benchmarks performance against preestablished goals. The George Morris Centre uses a performance measurement system which begins with the “big picture goals.” The goals of the program are the key to the evaluation. All actions and results are evaluated as to their effectiveness in achieving the goals. We then evaluate the broad-based actions and programs which are designed to achieve those goals.

This study quantified many of the results associated with the BIDF. One important point needs to be noted at the outset, however, with regard to quantifying results. That is, while it might be possible to provide a single distinct number that could be used to indicate BIDF’s return on public investment, this single number would be misleading. It would be misleading for a number of reasons including:

- a single estimated “return on investment”(ROI) would miss the long term research results which have not yet come to fruition.
- a single number would underestimate the impact of certain domestic market development components due to the proprietary nature of some of those projects.
- a single estimated ROI would not be able to capture the dollar value of the change in attitudes of consumers and health professionals.
- a single ROI would not capture the benefits of enhanced farm quality assurance programs.

For these and other reasons, while we did quantify as many aspects of the BIDF as possible, we have chosen not to summarize the BIDF into a single number.

Another point that must be noted is that given the wide variety of forces at work on the industry, we cannot state that BIDF is the sole reason for the achievement of a particular goal. With those two caveats aside, however, after looking at the entire program we are prepared to make a number of clear statements regarding BIDF and the attainment of goals.

First we want to comment on the goals themselves. The goals that BIDF sought to address in the areas of quality, safety, efficiency etc, are the key issues that needed to be addressed for the success or even the survival of the beef industry. The industry and government leaders involved in BIDF, in effect took on the most important challenges of the beef industry through the program itself. The goals of BIDF were the right goals for the industry.

Did BIDF meet its goals? As noted above, it is difficult to conclusively state that any individual BIDF initiative was responsible for the attainment of an industry goal. At the same time, we can make conclusive statements about the impact of the entire BIDF program by looking at where the industry was in 1995 compared to the end of 2000. Every goal that BIDF set has been either attained or significant movement in that direction has been achieved. While one could argue that the attainment of one or two goals could be coincidence, we cannot surmise that positive results on all fronts is coincidence.

In addition to the attainment of goals, special mention needs to be made with regard to program reach. In a multi-billion dollar industry such as the beef industry, the impacts from expenditures of an average of \$5 million dollars each year could easily be lost. The real strength of the BIDF was its influence in the industry through its reach to all sectors. For example, training manuals are now successfully in use in thousands of farms across Canada. The new retail naming system is now being used by all the major retailers in Canada and has even spread to the United States. The new nutrition information has been spread to health professionals across the country through journals and seminars. This is the reason why BIDF has been successful. The program leaders have made communication or reach throughout the industry a key requirement.

Another point needs to be raised regarding the program structure. This program should serve as an example of industry-government cooperation in the achievement of industry objectives. BIDF could only be a success with both levels of government and all sectors of the industry working together. This work took the form of agreeing on goals, determining funding for each goal, evaluating priorities, and approving projects. At each step the process could have failed due to disagreements over funding and share of dollars. The BIDF managed to work through those pitfalls because of its structure which included all industry sectors in each component and the fact that the components were targeted on industry goals.

The Quality Starts Here initiatives of the Training and Technology component is a good example of both reach and the overall BIDF structure. The training and technology component projects have been successful in addressing several issues related to improving beef quality and safety. One of the most important results of the work of the Quality Starts Here program is a recognition and decision that food safety is the most

important aspect of their mandate. This is a result of the industry coming together to discuss beef quality and safety issues and having to decide what the strategic direction of the program and the industry should be.

The overall impact of the projects funded in this Training and Technology component has been to increase beef quality and safety. This has partly been achieved through research, but more importantly through effective communication and dissemination of information to various sectors of the industry. The biggest challenge faced by the beef industry and the Quality Starts Here program is not determining how quality and safety can be improved, but getting this information into the hands of those who need to implement it. In this regard, the program has been successful, as evidenced by the demand for the various fact sheets and producer manuals that have been developed. The results of the second Beef Quality Audit provide some feedback which indicates that the information generated and distributed by Quality Starts Here has been implemented successfully.

We also wish to comment on the program integrity. The BIDF committee has demonstrated exceptional levels of responsibility towards government funding. Reporting structure as well as external auditing or evaluation over the years has ensured the funds were spent as they were intended. The structure also ensured that money was not wasted on initiatives that showed little promise. The committee should be commended in this regard.

In summary then we have concluded that BIDF has been a successful program for the following reasons:

- attainment of goals
- completion of tasks/projects
- responsible use of government funds
- influence and reach of the initiatives upon the industry

A Comment on Context and Structure

In order to understand the Beef Industry Development Fund (BIDF) program including its accomplishments and weaknesses, it is necessary to review its history. It is also important to have an appreciation for the infrastructure and programs that existed in the beef industry when the BIDF was introduced.

With regard to context it is important to note that the following industry efforts which are now regarded as crucial to success, were either not undertaken or were undertaken in a sporadic, unfocussed manner. For example prior to BIDF:

- the Canadian beef industry did not have off-shore representation in all key export markets
- product development in the Canadian beef industry was meager, unfocussed and enjoyed little success
- nutrition research on beef was deficient and outdated
- there was no focused research on E. Coli
- the concept of developing quality and safety linkages between meat case and farm

was not feasible without resources, benchmarking and research

The key point is that prior to the BIDF, industry efforts at achieving competitive success were fragmented, under-funded and lacked customer focus. BIDF prompted the industry to look forward up the value chain.

The advent of BIDF did much more than provide levels of funding for projects. The key contribution of BIDF was that on one level it prompted and on another level it enabled the industry to develop a cohesive vision of where it wanted to be in the future.

This in turn brings forward another key contribution of BIDF. The program structure brought all sectors of the industry together along with key government personnel and researchers. Only under this format and frankly only with the funding as an inducement, could the industry determine key priorities and strategies.

This is another of the BIDF's biggest accomplishments. In our opinion, the BIDF industry and government participants successfully determined the key issues facing the industry. BIDF participants identified strengths and weaknesses and determined the tactics and strategies needed to address them. There is no question that there is a strong and clear correlation between the BIDF and the issues in the beef industry. Only via this structure with representation from the entire industry and government, could this have occurred.

Another key benefit of all sectors of the industry working together with government is the fact that the structure nearly guarantees accountability. That is, the structure ensures that all priorities are examined and that all sectors are given an opportunity to make a contribution. At the same time the structure ensures that funds are spent on the strongest priorities and that weaker avenues are dropped early.

Further to that point, in examining the fund and its operations via extensive documentation, it is most apparent that the fund has been exceptionally well managed. Before moneys are allocated between components, rigorous debate and determination of merits has occurred. Before projects are approved a two tier committee structure vets the project to determine how it fits with component goals and BIDF goals. Before projects proceed in full they are tested at various stages to determine the merits of proceeding to the next stage. In addition, the BIDF has employed unbiased outside consultants and appraisers throughout the program to examine the performance of various components.

From the determination of targets to program management to results, we believe that BIDF could be used as a model for future industry programs.

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INTRODUCTION

BIDF Background and Overview

The history of the BIDF is rooted in the National Tripartite Stabilization Program. Price support for the cattle sector under the National Tripartite Stabilization Program (NTSP) was introduced in 1986 as a voluntary financially self-sustaining program, whereby producer premiums, government contributions and interest were required to equal support payments to producers for any period that national market prices fell below calculated support prices.

At the request of the Canadian Cattlemen's Association the federal and provincial Ministers of Agriculture signed a memorandum of understanding agreeing to the early termination of the NTSP for beef as of December 31, 1993, a full two years early. In making the request the CCA felt that any trade actions by the US, Canada's largest market for beef, as a result of payments under domestic price support programs could have serious impact on market returns by all Canadian beef producers.

At the time of termination, the NTSP cattle accounts were in a surplus position. Under the NTSP surpluses are returned to the respective participants. The Ministers also committed to the provision of transitional programs as a transition to a whole farm income stabilization program. The transitional programs were developed in consultation with producers and their provincial associations. The provinces of British Columbia, Alberta, Saskatchewan, Manitoba and to a partial extent Ontario agreed to the development of a Beef Industry Development Fund which would result in contributions being provided to industry development projects aimed at increasing the competitiveness of the beef sector.

In September 1994, the Federal/Provincial agreement was signed to create the BIDF. It created a committee to administer the fund composed of four federal government representatives, four provincial government representatives (one from each participating province), five producer members, one from BC, Sask, and Manitoba and two from Alberta. It was agreed that the Canadian Cattlemen's Association (CCA) would serve as the secretariat for the committee. It was further decided that the areas of beef export market development and domestic market development should be directed to the Canadian Beef Export Federation (CBEF) and the Beef Information Centre (BIC), respectively, on the basis of submission of business plans. At a later meeting it was agreed that the areas of adoption, training and technology be directed to the Canadian Cattlemen's Association (CCA) and that the Research component be directed to Alberta Agriculture Research Institute (AARI).

In November of 1994, Ontario agreed to contribute surplus funds to those needed for their Bridging program to the BIDF. The committee provided for an Ontario producer to act as an "invited expert" to the fund committee and participate in all committee meetings and activities.

The BIDF Committee meets on a regular basis to administer the fund and review and adopt funding proposals received from interested parties.

A yearly planning workshop is hosted by the Fund Committee with representatives from

all sectors of the industry invited to participate. This workshop encourages an interactive discussion to review, and if required revise, the goals of the fund and its progression to date.

The fund is comprised of \$24.8 million including interest, for allocation over five years. The four western provinces have contributed an amount equal to half the money that they paid in beef NTSP premiums the last year the program was in place. Ontario has agreed to provide funds which are surplus to those needed for their bridging program. The federal government will match all contributions.

The Funding committee has allocated funds to the overall goals of the BIDF as follows:

- Domestic Market Development 24%
- Export Market Development 35%
- Research 25%
- Training/Technology 9%
- Unallocated/Reserve 8%

Performance Evaluation Framework

This paper is the performance measures evaluation of the Beef Industry Development Fund.

Performance research management determines how well the recommended actions are being carried out and what benefits in sales and profits are being realized. Performance measurement benchmarks performance against preestablished goals. The George Morris Centre uses a performance measurement system which begins with the “big picture goals.”

The goals of the program are the key to the evaluation. All actions and results are evaluated as to their effectiveness in achieving the goals. We then evaluate the broad-based actions and programs which are designed to achieve those goals. In the case of this project, it is not our intent to evaluate the merits of those programs or goals. The fact that the industry has decided on the goals and programs is evidence of their merit. The following is the very basic format of our performance measurement evaluation.

- Evaluate what activities, programs and actions were planned.
- Determine what activities, programs and actions were actually accomplished.
- Evaluate the results of the activities, programs and actions.
- Determine whether the results of the activities, programs and actions contributed to the overall goals of the program.
- Determine where possible, the financial returns in comparison to program funding.
- Examine the reach of the results through the industry from farm to retail

Evaluation Steps

Identify the critical activities to be evaluated.

BIDF's established vision, guiding principles and priorities have resulted in four main funding areas. Consequently, these funding areas form the 'critical activities' that will be evaluated: domestic market development, export market development, research, and training & technology

Establish the performance measurement(s) for each critical activity.

The type of performance measurement - qualitative or quantitative or both - for each activity or funding area will be determined according to the nature of the projects that have been funded. Essentially these measurements will be quantitative in cases where a definitive value can be assigned to the outcome or result of a project, such as domestic and export market development. Qualitative measurements will likely be required for the research and training & technology funding areas. In general, the performance measures need to demonstrate how effective and efficient BIDF has been in working towards its priorities and vision, and at what cost. This information can then be used to determine the performance of the funding areas individually, and then the performance of BIDF as a whole, in terms of return for the funding dollar.

BIDF PERFORMANCE EVALUATION

As noted the starting point for the evaluation is the goals and objectives of BIDF. As such it is important for the context of the evaluation to state the goals at the beginning.

BIDF Purpose: to support activities that would promote and enhance the competitiveness of the Canadian beef industry, domestically and abroad.

Vision: to have Canadian high quality beef recognized as the most outstanding by domestic and world customers.

Priorities:

- to have an industry committed to 100% customer satisfaction;
- to adopt an integrated food safety program;
- to encourage birth to plate information and evaluation;
- to add value to beef and cattle products and systems;
- to improve production efficiency.

Four Main Funding Components:

1. domestic market development,
2. export market development,
3. research
4. training and technology.

BIDF STRUCTURE

A discussion of how BIDF operated and was structured is warranted for two reasons. First, the structure was unique in that it brought together producers, industry and government with the common purpose of improving the competitiveness of the Canadian beef industry. Second, this structure was successful in achieving BIDF's goals.

The main BIDF steering committee was comprised of representatives from the sources of funding for BIDF. This included five producer representatives, four federal government representatives, and four provincial government representatives (one from each of the major contributing provinces). A producer representative from Ontario was invited to participate in meetings as a non-voting 'industry member', acknowledging that province's contribution to the fund.

Producer representatives were nominated by the Canadian Cattlemen's Association and appointed for a two-year term. Provincial and federal government representatives were appointed by their respective Ministers. These appointments were reviewed at the discretion of their individual Ministers. The committee also had the ability to invite observers and/or 'invited experts' to address the committee on an as needed basis regarding specific issues.

This mix of representation on the steering committee could have been difficult to manage, but instead was productive and successful. This is evidenced by the purpose and vision articulated by BIDF that guided funding decisions and also by the number and quality of projects that were funded. The development and implementation of the Canadian Cattle Identification Agency is an example of a project that follows BIDF's purpose and required the collaboration of many sectors of the industry.

In addition to the steering committee of BIDF, the committees that oversaw the individual components were also a successful collaboration of the various sectors of the Canadian beef industry. The Quality Starts Here program, for example, brought together industry stakeholders in order to improve the quality and safety of Canadian beef. The projects that were initiated by QSH (within the Training and Technology Component) dealt with issues that ranged from the producer level to retailers. Similarly, the Research Component steering committee brought together the scientific community and industry to determine, first and foremost, what areas the research should focus on. The strategic direction the committee arrived at was in itself an important accomplishment within the Research Component, and for BIDF as a whole that will have a long-term positive impact on the industry.

Overall, the structure of BIDF is an excellent example of how government and industry can work together to enhance the competitiveness and long-term economic health of an industry.

DOMESTIC MARKET DEVELOPMENT

Introduction

This section will examine the three initiatives under the Market Development Component:

- Product Development Initiative
- Retail Meat Case Initiative
- Nutrition Research Initiative

One over-riding aspect of the Domestic Market Development Component is the working relationships and partnerships between the BIDE principals, government and industry. The organization that served as the project coordinator was the Beef Information Centre. Almost all of the projects involved close working relationships with retailers, packers, government and the Beef Information Centre staff across Canada. This is one of the most positive aspects of the Domestic Market Development initiative. It has encouraged all sectors of the industry to work together towards a common goal, increasing beef demand.

Working with private companies was crucial to achieving these goals and as a result of working with private companies, strict confidentiality was a requirement. From an evaluation perspective, however, this confidentiality aspect of the BIDE meant that hard data impacts and results are not possible for many individual projects. As such, we have evaluated each of the individual parts of the Market Development Initiative by looking at whether or not the stated tasks were accomplished and how effectively they were accomplished. We were unable to judge however, whether each component in itself added to beef consumption or added to the dollars spent in the industry.

For that important aspect of this evaluation, we chose to look at the overall impact of all the projects together. In that respect we looked at the changes in the industry as a result of the entire Market Development Component. As such, the individual segment evaluations have a “soft” result focus. The final Market Development evaluation, however, contains much “harder” conclusions.

1.PRODUCT DEVELOPMENT INITIATIVE

Note Regarding Evaluation Process: This Performance Measures Evaluation will provide an overview into the project process within the Product Development Initiative. This Performance Measures Evaluation does not offer a similar overview for the other initiatives within the other components. This is not an indication of the relative importance of the PDI initiative. Instead it simply serves as an example of the thoroughness of the BIDE process as outlined in the committee structure above. That is, all initiatives undergo similar rigor but we have chosen to outline the PDI process simply because it is the first initiative in this report.

Background

The Product Development Initiative (PDI) was introduced in 1995 with a five year mandate from the Beef Industry Development Fund. The purpose of PDI is to promote “successful development and launch of new value added beef products.” Broad-based goals were the

following:

- increase beef consumption
- improve carcass utilization
- increase profitability
- provide competitive differentiation
- overcome barriers to commercialization

More specifically, the PDI sought to accomplish the following objectives:

1. To stimulate beef product development through support to research and development activities.
2. To increase the proportion of value-added beef products available to foodservice operators and retail customers.
3. To increase beef's market share through the availability of new beef products at retail and on foodservice menus.
4. To provide marketing support for new beef products that show the greatest potential for success.

PDI's basic tactical or procedural approach is to handle or deal with the following areas:

- concept screening
- market research
- package development
- product and process development
- promotion costs

Total funding for PDI was \$2.3 million. Projects funded have ranged from \$3,500 to over \$400,000.

This Performance Measures Evaluation has surmised that PDI was involved in the following type or class of projects:

- Retail Packaged Products
 - meal replacement/convenience
 - ethnic/Halal
- Food Service
 - full service
 - fast food
 - Institutional
- Value added product for further processing markets

PDI Framework

We can see a direct link between the BIDF's goals and the projects which were funded as part of this initiative. That is, at the initiation of the program, the PDI developed a clear set of guidelines to determine funding. Each of these guidelines is directly focused on at least one, but usually more than one BIDF program goal.

In addition to the goals, before determining which projects would be funded, the PDI determined industry needs which were consistent with the mandate or goals of the program. These needs formed a criteria upon which funding decisions were based. These seven criteria were:

- marketing research
- distribution options
- packaging options
- product identity
- test market support
- new product awareness promotion
- production process for new products

In addition to those needs, the PDI determined barriers to new product introduction. Those barriers were:

- financial
- knowledge (marketing, packaging, technical and distribution)
- fear of risk or lack of confidence
- time/energy/focus

Projects were then judged based on whether they met the criteria and addressed the barriers.

Finally, in addition to goals and criteria, projects were evaluated through a process of “due diligence.” This due diligence involved hands-on or market and consumer testing. This practical testing was a layered process. That is the PDI employed an “if, then,” process, whereby funding and projects only advanced to a second or third funding stage if they passed the previous stage.

Comment on Process

The PDI employed a logical and rigorous technique to evaluate projects. The process ensured that the projects were targeted on program goals. The process also employed safeguards or measures to ensure that funds were utilized on projects that stood the greatest chance of benefitting the industry.

New Product R&D Initiatives

For the purposes of this evaluation, we have appraised each of the projects funded under the PDI. It is not the intent of this evaluation to list and profile each project in detail. Appendix A provides a summary sketch of George Morris Centre findings and analysis.

The George Morris Centre evaluated the funding rationale, goals and results of each project. For each project shown in Appendix A, it was readily apparent as to why each of the projects were funded. That is, of the 12 completed projects we were able to determine that each of them addressed at least one of the goals of the program. We were unable, however, to discern the rationale behind the funding of Quick Serve and Beef at Foodservice at least based on their abilities to reach PDI goals.

Conclusion

With the exception of the two projects noted above, we conclude that the PDI funded targets were logically focused on program goals and objectives.

Measures of Project Success

Measures of success for new products usually include the following:

- Survival over a targeted period of time
- Growth and then profitable maintenance or expansion of market share.

We note that traditional measures of success such as rates of return on dollars spent are not possible with the PDI. This is due to the fact that the projects were conducted with private firms that have need for confidentiality with regard to sales and earnings of these new products. As such, we will assert that survival in the marketplace in itself is an indication or measure of profitable maintenance or expansion of market share.

Other measures of success however, will typically include:

- Development of new business opportunities
- Development of new business partnerships
- Learning from mistakes
- Expanding opportunities for followers
- Establishing product beachheads

Appendix A provides a summary of the results of each of the 12 projects. Based on the stated results, eight of the 12 projects have survived and are experiencing growth. Those eight successful projects are the following:

<u>Name</u>	<u>PDI Funding</u>
Processing of Restructured Steaks and Roasts	\$76,382
Breaded Whole Muscle Veal	\$8,848
Beef at Food Service	\$156,053
Create-A-Meal	\$240,975
Sirloin Steak Slices Philly Style	\$32,609
Halal Beef	\$433,480
Initially Certified Angus; Introduced as "44th Street" brand	\$26,000
Szechwan Beef	\$31,000

In the packaged goods industry, widely publicized research has shown that up to 90% of all new products fail in the first five years. In comparison to that failure rate, the 75% success rate that the PDI is currently experiencing is exceptional.

Beyond the survival and growth measures we note the following ancillary benefits as outlined in an earlier evaluation of PDI by Koch Paul Associates from those projects that did not survive.

- Exposure through promotion and recognition of the participating company in BIC communications, and trade show sponsorship.

- Networking opportunities
- BIC's unbiased view offers "perspective" and a "sounding board" to companies.
- Knowledge base in technical aspects (e.g. frozen beef, shelf life for fresh), costs, the overall new product introduction process, and target marketing can be applied to future launches including export development and negotiations with retailers
- Recognition of the importance of the marketing function and marketing research. In one case the company hired a Senior Marketing Manager as a result of the process.
- Refinement of pricing strategy
- The "credibility" of BIC's endorsement aided in establishing relationships with the distribution channel (retail and food service). BIC's knowledge also helped to overcome some distribution and shipping issues.
- Acceleration of the new product launch process.
- Introduction to suppliers.
- Introduction to consultants who will continue to be utilized.

Another important contribution of the PDI is that it leveraged private sector funds into new product development in the beef industry. The PDI funded 70% of the costs associated with product screening and 100% of the funding for fact finding. Beyond that, the PDI only funded 50% costs of the other aspects of the projects. As such, the PDI dollar amount is only a share of the dollars that actually were spent on the projects. Furthermore, according to Koch Paul's survey, most companies would not have conducted the research without the PDI.

Product Development Initiative Conclusion

The projects funded under the PDI have enjoyed a very high success rate in comparison to the food industry as a whole. Even those projects that were not successful appear to have resulted in benefits accruing to the companies involved. Furthermore, we note that previous analysis has shown that without the PDI, the vast majority of the projects would not have been initiated. Of those that would have been initiated, without PDI, all stated that they would have occurred at a much slower pace or may have used meats other than beef.

It is unfortunate, however, that due to the nature of the projects, there are little or no "hard" data to work with regarding dollar or tonnage sales increases. As such we are unable to make claims with regard to PDI's impact on market share.

We can, however, confidently assert that the relatively small number of PDI projects have leveraged a great deal of industry activity over the past five years. Prior to PDI, there was little or no value added beef products. Now value added beef products are becoming very common. In addition there were few products that utilized beef as an ingredient (such as Create a Meal). In this regard we state again that perhaps the most important aspect of the PDI is the beachhead effect. That is, companies such as Nestle had not previously considered beef as an ingredient. Now as a result of PDI, beef is a protein choice for firms that may not have considered it as such in the past.

As noted above without PDI, much of the research or development would not have occurred. While this does not mean that value added production would not have occurred in Canada, it does indicate that the PDI component of BIDF was on the leading edge of the industry in its focus and objectives.

2.RETAIL MEAT CASE INITIATIVE

The Retail Meat Case Initiative was launched as a separate component of the Market Development Initiative in 1995. Total funding for this component amounts to \$1.85 million. The expected results for the initiative were the following:

- To increase beef's market share initially in test stores and subsequently overall.
- To increase the shelf space devoted to beef.
- To increase the number and proportion of value-added convenience beef items in the meat case.
- To educate the consumer about beef product selection and preparation, thereby increasing customer satisfaction.
- To provide a data base on consumers' purchase behavior and cooking practices.

Over the course of the five years there were 19 projects approved by BIDF. It is not our intent to individually review each of the 19 projects. Instead we have grouped the projects by type and have evaluated them as a group. Our basic appraisal format will be to once again evaluate the RMI based on the stated goals and tactics that the BIDF sought to employ and achieve.

NOMENCLATURE (NEW NAMING SYSTEM)

Funding for this project was \$ 195,000. The expected results were:

- To develop a consumer focused system that can be readily implemented at retail and will facilitate fair trade. This system will assist consumers with product selection and preparation; thereby increasing cut repertoires and improving product satisfaction.

Status

The program has received strong industry support from working group participants representing Canadian Council of Grocery Distributors, Canadian Meat Council and Consumers Association of Canada. As background research, national consumer research was completed and the results were used to provide concise direction for drafting a new system. The system development was completed in January 1998 with retail introduction of new cut names and merchandising program in February to April 1998.

The merchandising program introduced was based on three key components, new cut names, counter layouts based on cooking method and on-package cooking instruction labels. Industry acceptance has been extraordinary. To date 9-10 major chains plus many independents have adopted aspects of the new system. It is estimated that upwards of

80% of beef volume sold at retail is being sold using this new system.

It is of interest to note that several major US supermarket chains have introduced the layout and on-pack label elements of the program. Chains include Kroger, Safeway, A&P and H.E.Butt with the list growing continually. National Cattlemen's Beef Association are claiming the program contributed to a \$40 million dollar sales increase in the first year.

Results

Two years after the introduction of the program, results have shown that grocery banners who have fully implemented the new beef naming system have seen a 17.7% increase in dollar sales compared to an increase of only 2.7% in chains not using the new system or not executing it well. The kg volume increased 12.7% for chains with the best execution compared to a decrease of 0.2% in other chains. According to the NPD Group Canada, double digit growth is a "phenomenal achievement in a well established category such as beef."

As a result, the program sales of underutilized cuts are increasing the most relative to chains that are not using the system. NPD data shows that sales of pot roast and simmering steaks, cut from the chuck have increased by 75% in volume for chains using the system. Packers are reportedly experiencing an increase in demand for the slower moving sub-primals.

COOKING INSTRUCTION PROGRAM

Funding for this program amounted to \$ 325,000. The expected results were to provide consumers with accurate cooking instruction to aid in product selection and preparation, thereby increasing cut repertoires and improving customer satisfaction.

The status is as follows:

- Design and development assistance has been provided to major banners to develop chain specific cooking instruction materials.
- Generic cooking instruction labels and rail cards have been made available through a major label distributor.
- "New Name Beef" consumer guide to the new naming system developed and distributed.
- Design and development of on-pack instruction label programs continues for major supermarket banners.

RETAILER SPECIFIC PROJECTS

The RMCI undertook several projects with specific retailers. These projects included AAA programs at Loblaw and Costco and the Beef Beyond Belief program at A&P. Another subset of the retailer specific projects included marinate pack projects with Loblaw, IGA, A&P and Overwaitea. Finally, another subset was the product development initiatives.

Results

The expected results of the AAA programs and the Beef Beyond Belief program were to improve the quality, consistency and customer satisfaction and to improve beef's

competitive position versus other proteins. Each of these initiatives involved supply-chain linkages from producer through retailer with regard to quality. Each of these initiatives are now operating successfully and independently of BIDF. While sales are confidential, companies' have noted that the results have exceeded expectations. Furthermore, these programs have served as an example of how similar programs could work for other retailers and packers.

The expected results of the marinating programs were to improve the convenience, variety and eating quality of hip and chuck cuts and to provide a merchandising tool to improve salability of underutilized cuts at retail.

The BIC has worked with retailers to introduce quick marinating and stewing sachets. These sachets allow the slower cooking cuts to be prepared much more quickly. This in-turn should appeal to the consumers who now may know how to cook a marinating steak or beef stew but still do not have the time. The premise is that encouraging consumers to purchase a wider variety of beef cuts means that more dollars are returned to the beef industry. This is as a result of the fact that these whole muscle cuts are sold as such as opposed to being ground and sold as ground beef.

These sachets are now available at the fresh meat case of Overwaitea, Loblaw, Zehrs, Your Independent Grocer, Sobeys, A&P/Dominion and IGA/Knechtel's under the retailer's own brand as well as at some smaller chains and independents under the Magic Creations brand name.

Finally, the retail meat case initiatives were developed to introduce convenience oriented, value added items to consumers and to increase the availability of beef within the emerging home meal replacement segment at retail. These initiatives also sought to improve the eating quality, customer satisfaction and salability of underutilized cuts.

There were three projects that we classified in this category. They included the Mira-Chef Case-Ready Value-added Program, Rotisserie Roast Beef, Slice and Save and the Meat Factory Product Line. These projects have been implemented and are operational in stores across Canada. The above products have reportedly met with varying degrees of success from tremendous to so-so. The one major benefit from the program to date is that retailers are now demanding more beef value added products from underutilized cuts. Currently several other retailers in the Ontario, BC and Alberta markets are researching how this item can be incorporated into existing product mixes. In addition, other retailers are examining how they can utilize similar programs in their own Home Meal Replacement endeavors.

Trade Communication

A major aspect of the retail meat case initiative was to communicate the results of the above noted projects to the retail trade. The premise was that without effective communication of the impacts of these programs, the up-take would be minimal. As such, the expected results of each of the trade communication efforts was to reach retailers and communicate the benefits of the new naming system, value-added merchandising and effective point of sale programs to stimulate beef sales. It was also expected that these

new products and their sales and profit potential could be most effectively introduced to retailers at trade shows and seminars.

Finally the "Meal Time Savours" Program with funding of \$50,000 was developed to increase the availability of value added beef products and to increase demand for underutilized cuts. This was expected to be achieved through the creation of a guide to manufacture and merchandise 50 convenient value added products. Nearly 1000 of these guides have been distributed to date to primarily retailers and processors. The guide has increased awareness that beef is suitable for value added items.

Retail Meat Case Initiative Conclusion

At the outset of the BIDE, the Retail Meat Case Initiative set out to accomplish certain tasks including:

- Educate consumers
- Develop a cooking card series
- Develop a merchandising and marketing guide
- Develop a consumer nomenclature system

Over the past five years, the RMCI has completed each of the tasks that it set for itself and much more, particularly as it relates to company specific efforts.

It is also important to make particular note of the nomenclature endeavor. This is one of the highest profile initiatives under the BIDE as it involved a major change in the most visible aspects of the industry, the meat case. The program focused on one of the key factors that has limited beef consumption over the last twenty years, a decrease in consumer understanding of beef cuts. That is, consumers in recent years have lost the knowledge of how to cook different beef cuts. As a result, beef was either not purchased or those instances when it was purchased often resulted in a poor eating experience due to wrong preparation. This initiative addressed that issue with a simple, straight forward solution at a very low cost relative to results.

As with the PDI, it is difficult to isolate RMCI specific impacts on the industry. That is, nearly all of the projects were either with private firms or were educational in nature. The private firms were not required to reveal the dollar or tonnage impacts. Of course the education or communication efforts were necessary but again the impacts on the industry cannot be quantified.

3.NUTRITION RESEARCH & EDUCATION INITIATIVE

As with all aspects of the Market Development Component, it is not our intent to report on the results of our examination of each project on an individual basis. Instead we will provide a summary of our findings for the initiative as a whole.

Funding for this initiative amounted to approximately \$1.1 million over the course of the BIDE. The goals or expected results were:

- To identify and regularly update the data related to: beef's nutrient profile;

beef's role in human health and in the prevention and/or development of chronic disease; food consumption patterns; and the nutritional status of a variety of key target groups.

- To disseminate the data and study results in a timely manner to specific target groups by means of marketing and public relations in order to reinforce beef's image as a healthful nutritious product.

This initiative was heavily weighted towards scientific research at universities across Canada. The following is a listing of the approved projects:

- Determination of the food and nutrient intake of Canadians 13-64 years of age
- Establishment of the biological activity of conjugated linoleic acid (CLA)
- Impact of beef consumption on total and absorbable iron and zinc intake in an adult population in Quebec
- Beef protein in a lipid lowering diet
- Nutrition attitudes and dietary intakes of pre-menopausal vegetarian and non-vegetarian women
- The importance of dietary intake of beef on the iron status of adolescents
- Nutrient analysis of Canadian beef cuts

The other aspect of this initiative, other than the research projects is communication. In that regard, the communication/publicity component of the project carried funding of \$180,781.

Results

Six out of seven nutrition research projects have been completed. Results will be published in professional journals within the next year. Presentations on the results have been made at five professional conferences in the past year. Results of one study were presented to Agriculture and Agri-Food Canada staff; results of two studies have been presented to staff at Health Canada.

Key results from the research projects show:

- Canadians have changed their diets to reduce fat to the level recommended by government and health associations/professionals. Foods in the Other food group (fats, oils, salad dressings, pop, snack foods, etc) provide a significant proportion of energy and fat to the diet without many other nutrients.
- Conjugated linoleic acid (CLA), a fatty acid found in beef, enhanced immune function and reduced breast tumour growth when tested in an animal model.
- Beef is the best source of highly available iron and zinc.
- Beef is as effective as chicken or fish in reducing serum cholesterol levels in hypercholesterolemic men.
- Meat eaters are as lean as and consume a similar level of fat as vegetarians; vegetarians were at risk for nutrient deficiencies, particularly vitamin B12.
- Alberta teens had better iron status than expected; researchers think this is because the teens include beef in their diet.

Media relations have complemented the scientific presentations. They have resulted in numerous reports in newspapers and on radio and TV. The majority of these reports have been very positive to beef and help to overcome misconceptions about beef's role in a healthy diet.

Nutrition Initiative Conclusions

One of the first points to note with regard to this initiative is that it, like all scientific research, is long term in nature. Results are just beginning to be comprehended by the industry, health professionals and consumers. In many respects, given the concerns expressed regarding the healthfulness of beef in the 1980's and 1990's, this research is likely going to be considered as being among the most important that the industry has undertaken.

Based on our evaluation, we have observed that the BIDF Nutrition Research Initiative has the following benefits:

- Provided an opportunity for a 5-year program with specific objectives. It has provided an opportunity for a planning horizon rather than one year budgeting.
- Resulted in research findings that reinforce the positive role of beef in the diet and help to overcome negative perceptions about the product. Some of the research filled identified voids such as the need for a national monitoring system
- Provided third-party credibility rather than communications coming from BIC
- Positioned the beef industry in a positive light with the research community and with health professionals.
- Allowed us to develop a new network of allies to deliver our messages
- It is apparent that it would be valuable for the beef industry to continue to fund nutrition research on a regular basis, recognizing the time involved in the process - applications, review process, research, writing and submitting papers, etc.

Domestic market development summary performance evaluation

Summary Notes on Initiatives

As noted in the introduction to the evaluation of this component, the intent of the appraisal of each individual initiative was to see whether the tasks and tactics (i.e. the projects and outputs) were completed as planned. The individual initiative evaluations also sought to determine the specific results of those projects and outputs. In other words, what was the immediate impact of those projects.

Based on our evaluation we observe that all of the projects and all of the outputs which were planned for this component were completed. In that aspect the Market Development Component has been remarkably successful. The successful completion of all outputs also demonstrates the importance and thoroughness of the planning that went into this component in the early stages of BIDF.

Another summary point regarding the individual initiatives is the fact that the outputs and projects were all logically focused on both the narrow goals of the initiative and the broad goals of the component. All the projects were targeted to achieve planned BDF objectives.

A final summary point regarding the individual initiatives relates to the project success rate. We looked at project success rates as measured against expected results. We found that the vast majority of the projects were successful as defined by the expected results. Even in the highly risky areas of new product development, success rates were far greater than in the industry as a whole.

We also noted at the beginning of this evaluation that it was not possible to attach numeric results to each initiative. That was largely due to the fact that many of the projects were carried out by private firms and the results were confidential. With that said, we do believe that it should be possible to attach hard data to the component as a whole. In other words, after five years of three broad initiatives encompassing over a hundred projects and outcomes, we should expect to be able to measure some broad results.

In that regard, it is prudent to once again state the performance indicators for the Domestic Market Development Component of the fund:

- Change in market share vs. major competing proteins.
- Change in the proportion of value added products available to retail and foodservice customers.
- A broader selection of beef products at retail and on foodservice menus.
- Change in customer attitudes with respect to healthfulness and product satisfaction.
- Change in health professional attitudes with respect to beef's nutrient profile and consumption patterns.

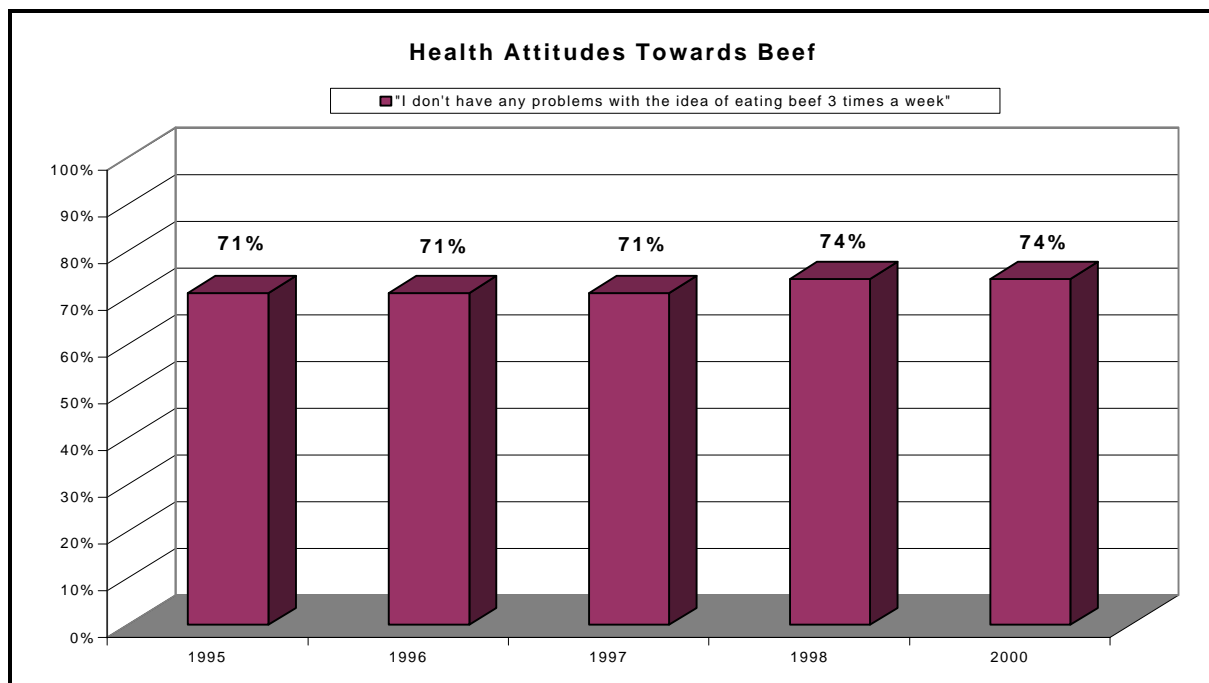
The following are hard data indicators of performance as targeted towards those indicators:

- Point of sale materials continue to generate high levels of awareness in general, with a significant increase in recall of Cooking Instruction Information over the past 2 years (from 40% in 1998 to 49% in 2000).
- While awareness is lowest among younger consumers (38%) usage is highest (28%) along with those 25 to 34 years (28%).
- Households with children and those falling into the medium beef usage categories tend to have higher awareness and usage of Cooking Instruction Information.
- Among beef eaters, average number of beef evening meals continues to trend upward gradually (2.1 meals in 1995 vs. 2.6 meals in 2000).
- Further, heavy frequency of consumption (4+ meals/week) has doubled in the past 5 years (from 11% to 22%).
- Light consumption (1 or less beef meals/week) has declined from 35% in 1995 to 24% currently.
- Those claiming they are eating more beef than one year ago do so because of:

- S Preference/household appeal (22%).
 - S It's a favorite/well liked (11%).
 - S Tastes good/better/best tasting meat (11%).
- S Health reasons (19%).
 - S It's good for you (11%).
 - S It's a good source of iron (3%).
 - S It's a good source of protein (3%).
 - S It's low/lower in fat than it used to be (3%).
- S Price/value (17%).
- S Preparation (14%).
 - S Quick/easy to cook (8%).
- S A third (31%) of those eating more beef now could volunteer no reasons.

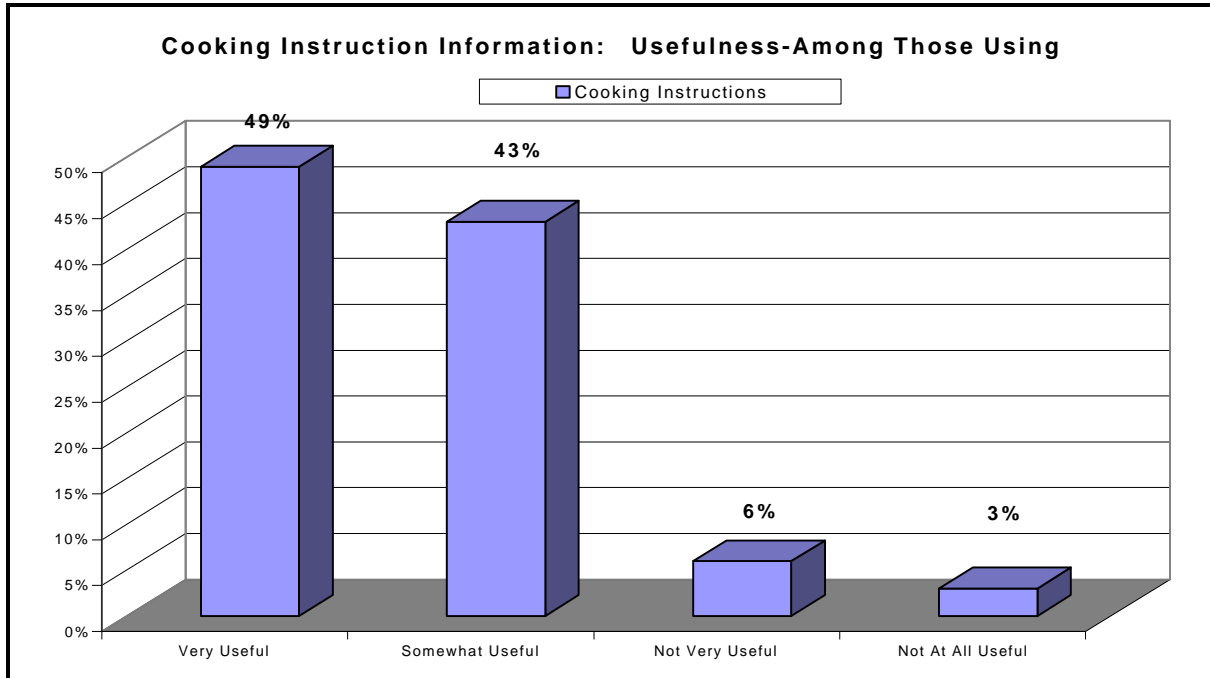
- The following tables and graphs provide an overview of the change in consumer attitudes since the initiation of BIDE regarding ease of preparation, taste/quality, healthfulness, and effectiveness of point of purchase materials.

Figure 1



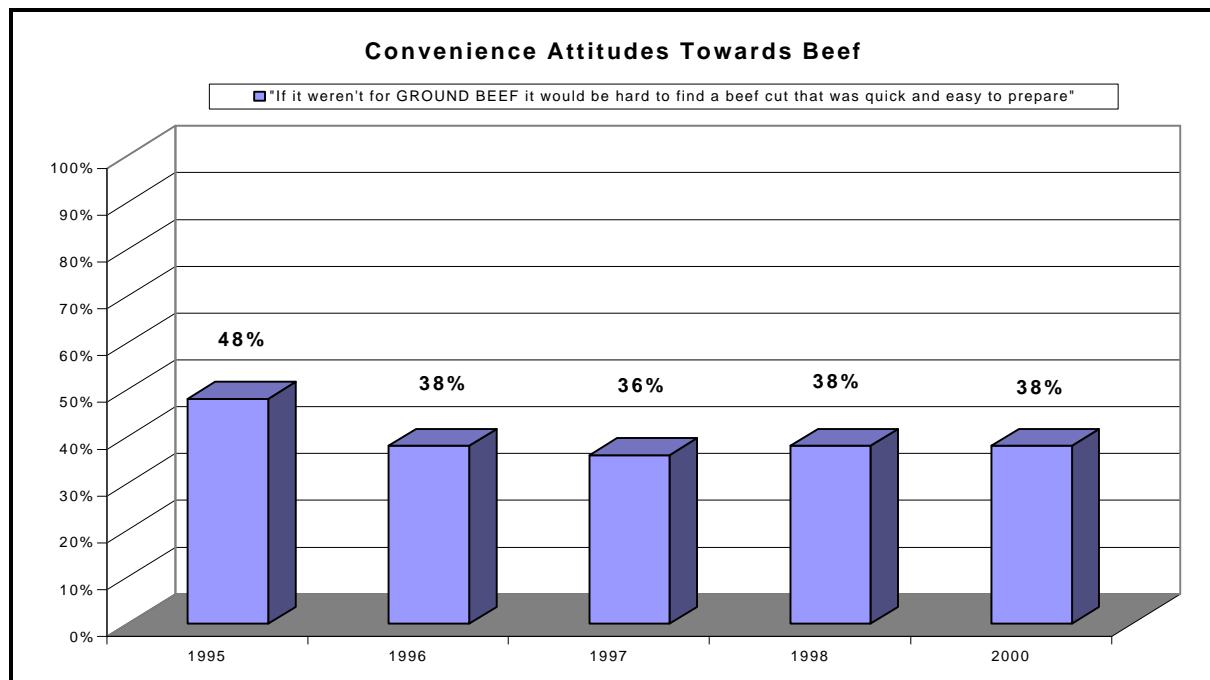
Source: Thompson Lightstone and Company

Figure 2



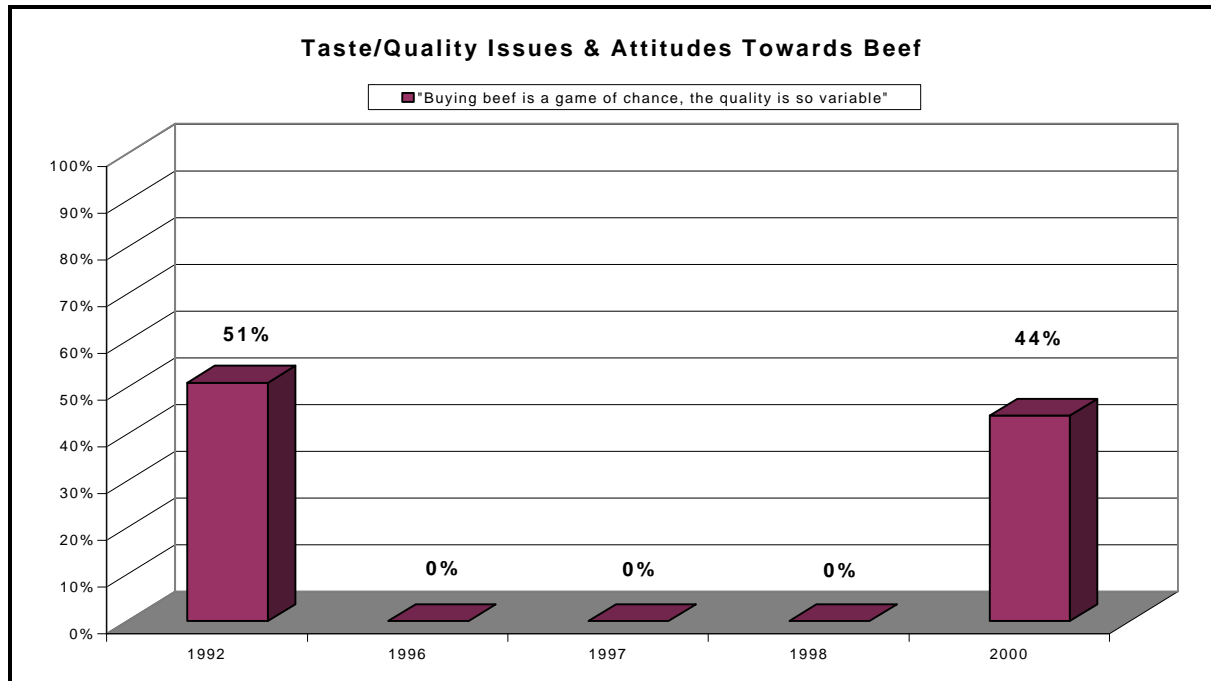
Source: Thompson Lightstone and Company

Figure 3



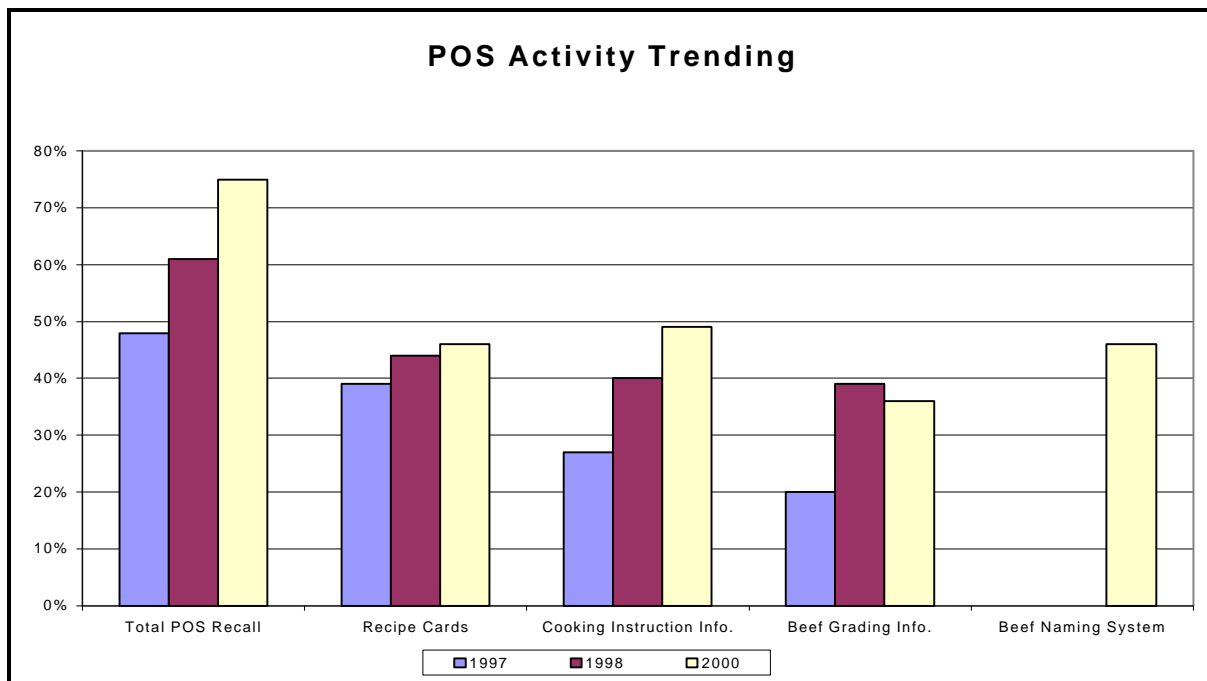
Source: Thompson Lightstone and Company

Figure 4



Source: Thompson Lightstone and Company

Figure 5



Source: Thompson Lightstone and Company

- The following table provides important summary data regarding beef prices and volumes between this year and last year (Note in order to preserve space in the table, abbreviations have been used. HH refers to Households and Occs. Refers to Occasions):

	<u>12 m/e Jun'99</u>	<u>12 m/e Jun'00</u>
Kg Volume (000's)	244142	249522
Dollar Volume (000's)		
.		
	19.2	19.4

Source: Consumer Panel of Canada, The NPD Group Canada Inc.

- The following table outlines the performance of beef demand over the last seven years. Note that while the data on the table above and on the table below show similar trends in consumption for 1998 to 1999, the data are not strictly comparable: one is Statistics Canada per capita consumption and the other is consumer panel data.

	KG	% Change
'93	22.7	+1.5%
'94	23.1	+2.0%
'95	23.1	-1.0%
'96	22.9	-7.4%
'97	22.6	-2.1%
'98	22.4	-1.9%
'99	22.6	+2.7%

Source: Canfax and Statistics Canada

- Considerable effort is being directed at the foodservice sector as value-added beef products are being tested at restaurant chains and new product ideas are being tested with consumer research. The companies that the program has had direct

- contact with include A&W, Taco Time and Cara.
- As reported by Crest Canada, total Foodservice Eater Occasions for the 12 months ending November 1998 were up 7% compared to a 3% decrease for the 12 months ending November 1997; while dollar sales were up 5% compared to a 2% decrease during 1997.
- During the same reporting period, ending November 1998, total Beef Eater Occasions were up 8% (out performing the total Foodservice market) compared to a 4% decrease in the previous 12 months. Looking specifically at burger sales, there was a 9% increase in total Burger Eater Occasions for the 12 months ending November 1998. Burgers outperformed both the total Foodservice category (7% increase) and the Beef Category (8% increase).
- Al Safa Halal is the greatest success story for PDI. There are now 7 branded beef products being sold in Canada and the U.S. There are almost 50 retail banners carrying the product with penetration along the entire Eastern U.S. market. The product is available in Ontario, Quebec, Alberta, and B.C.
- Industry acceptance of the new naming system has been extraordinary. To date 9-10 major chains plus many independents have adopted aspects of the program. It is estimated that upwards of 80% of beef volume sold at retail is being sold using this new system. Test market results to date have showed increases in customer satisfaction, sale of hip and chuck cuts expanded cut repertoires, and overall beef sales increases. Chain specific retailer scan data for retailers executing the program well indicate sales increases of 20% versus previous period sales before introducing the program. Consumer panel data provided by the NPD Group Canada Inc. comparing chains executing the program extremely well, OK and sort of /not at all indicates a 8.97 % tonnage increase for those executing 2.7% increase for those executing OK and 0.8% decline for those executing sort of / not at all.
- Several major US supermarket chains have introduced the layout and on-pack label elements of the nomenclature program. Chains include Kroger, Safeway, A&P and H.E.Butt with the list growing continually. NCBA are claiming the program contributed to a \$40 million dollar sales increase in the first year.

Market Development Component Conclusion

We can state that all of the broad based goals of the Market Development Component have either been successfully met or are moving in the right direction. Direct cause and effect relationships between the any one goal and the Market Development Component are difficult to demonstrate in a market place with hundreds of variables at work. That is, we cannot unequivocally state that an individual result or the achievement of any one of the goals is due to the Market Development Component alone. Based on our analysis of the entire package of initiatives however, it is clear that the Component has had a central role in moving the industry toward meeting these goals. It is also clear that without the Component, the industry would not have reached those goals or would not be as far advanced towards the goals as it is today.

Another way of saying that, is that it is far too coincidental to see that the industry is moving towards the successful attainment of these goals without the Market Development Component at first defining the goals, setting the course and providing resources.

EXPORT MARKET DEVELOPMENT

Introduction

The Export Market Development component is the largest part of the BIDE in terms of budget allocation. This component has been allocated \$7.5 million over the span of the fund. The project coordinator for this component is the Canada Beef Export Federation (CBEF).

Performance indicators for the export market component of the fund are:

- Change in market share vs. competing countries.
- Change in volume of shipments.
- Change in value of shipments.
- Increase in average product value exported.
- A broadened product sales mix with emphasis on high quality beef products, whole or processed.
- Impacts/opportunities resulting from resolution of market access issues.

The overall objective of the Component was to *initiate and undertake projects that will contribute to improving the market share of sales of Canadian beef in export markets through:*

- *information collection, coordination and dissemination*
- *product promotion, merchandising and other sales assistance*
- *addressing market access issues*

The analytical process we have adopted is to examine each of the programs and activities to determine whether the activities were completed or in process as planned. We also look to determine immediate results. This will demonstrate how well the program has been administered.

Beyond that level of analysis, after each program has been appraised in that manner, we will look at the universal effectiveness of the component in meeting stated performance indicators and objectives. In particular we will examine trade results at the end of the evaluation.

Programs and Activities Outline

The CBEF says it has enjoyed five years of strong BIDE financial support. That has allowed CBEF to implement a multi-year strategic business plan designed to create results in Asia and Mexico. The BIDE funds have been used to establish market representation in Korea, Hong Kong, Taiwan, China and Mexico. BIDE funds have also been used to increase market development efforts in Japan and five new markets.

CBEF has determined that local representation is key to export success. The six international offices deliver promotional programs and serve as a focal point for exporters and clients. The offices provide competitive intelligence and offer hands-on trade facilitation to all interested members.

In addition to this service, the CBEF undertakes comprehensive promotional programs in

each key market. The programs include:

- hosting buyer missions
- technical and sales seminars
- attends selected trade shows
- direct promotions in both retail and foodservice sectors
- cooperate with embassies and trade offices to increase the beef profile within the government sponsored “food fair” programs
- distributes news letters in the client language in Asia
- advertising and public relations projects targeted to both consumers and the trade

Appendix B provides an outline of the programs, services, and results provided now in each of the CBEF overseas offices. While it is not the intent of this evaluation to examine the specific work of each office, the fact is that each office is an integral component of the CBEF endeavor. The programs and results of each office are the contributing forces that allow the overall CBEF goals to be met or not.

Program Appraisal

In order to evaluate the effectiveness of this component it is important to again note the key performance indicators:

- Change in market share vs. competing countries.
- Change in volume of shipments.
- Change in value of shipments.
- Increase in average product value exported.
- A broadened product sales mix with emphasis on high quality beef products, whole or processed.
- Impacts/opportunities resulting from resolution of market access issues.

The following are indicators of the progress of the Export Market Development Component:

- Completion of an expanded series of industry-wide promotional and development projects. Retail and Food Service Promotions completed in Japan, South Korea, Taiwan, Hong Kong, the People's Republic of China and Mexico resulted in increased Canadian beef and veal exports (see below for magnitude of volume increases).
- The Federation's six international offices operated efficiently during the past two years, serving as potent market development resources (according to members using the services).
- The Federation played a leading role in addressing market access concerns in the European Union (hormone ban), Taiwan (tariff), China (plant inspections), Korea (origin of cattle) and Japan (GMO) to increase market share. The Federation also provided direct input to Canada's agriculture position in advance of the next round on World Trade Organization negotiations.
- Significant growth has been realized in the export of fresh and frozen

Canadian beef to target markets, supplementing the traditional mix of offal products (see below for magnitude of volume increases).

- The value of beef exported to the targeted markets increased 10% from \$3.87 to \$4.26 per kilogram over the life of the BIDF.
- The following table and the graphs on the following pages show the changes in exports to the targeted markets.

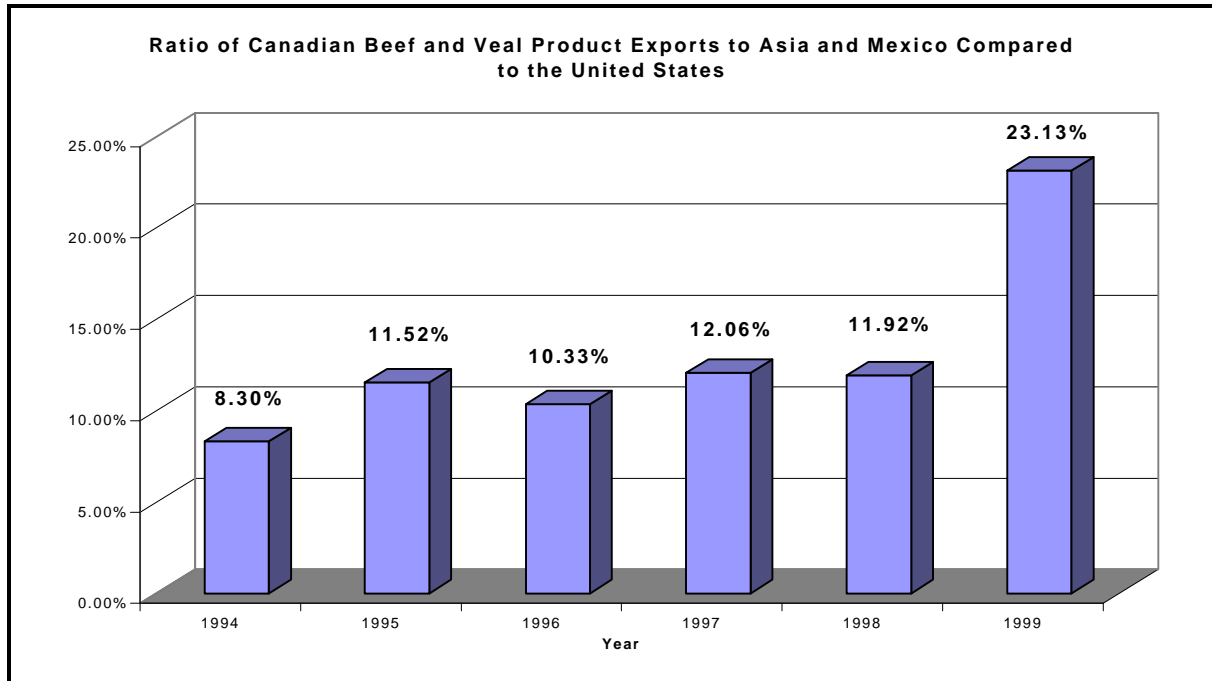
Canadian Beef and Veal Product Exports						
Targeted Market	Tonnes					
	1994	1995	1996	1997	1998	1999
Japan	6,501	11,733	14,314	18,357	23,628	27,544
South Korea	2,204	3,945	4,458	6,732	4,745	15,956
Taiwan	366	834	849	1,672	1,613	2,063
Hong Kong	716	675	1,664	1,252	1,645	1,762
China ¹	585	1,009	923	626	473	1,389
ASEAN ²	327	515	662	860	139	257
Mexico	4,860	2,998	3,149	6,700	8,506	27,336
TOTAL	15,559	21,709	26,019	36,199	40,749	76,307

Source: CBEF via country of destination Ministries

¹The People's Republic of China.

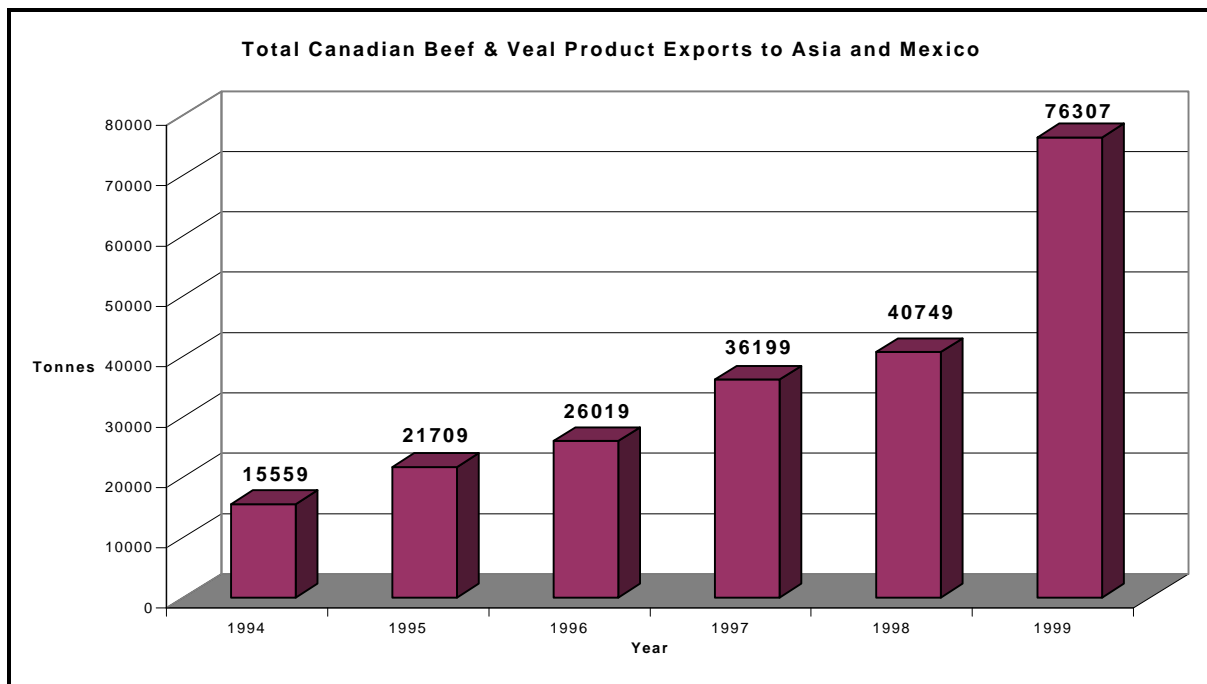
²The Association of Southeast Asian Nations, including Indonesia, Phillippines, and Thailand.

Figure 6



Source: CBEF via country of destination Ministries

Figure 7



Source: CBEF via country of origin Ministries

Other specific Export Component goals established at the beginning of BIDE included:

Change in market share vs. competing countries.

- Canada's market share in Japan has grown from .52% in 1994 to 2.42% in 1999 (preliminary)
- Canada's market share in South Korea has grown from 1.06% in 1994 to 7.86% in 1999
- Canada's market share in Taiwan has grown from .7% in 1994 to 3.4% in 1999 (preliminary)
- Canada's market share to Hong Kong and China has grown from .78% in 1994 to 2.78% in 1999 (preliminary)

Change in volume of shipments

(See table above)

- The volume of Canada's beef exports to the targeted countries has grown by nearly five times from 1994 to 1999.

Change in value of shipments.

- The value of Canada's beef exports to the targeted countries has grown from \$52 million in 1994 to \$324 million in 1999, an increase of over 6 times. This in turn means that another goal has been met. The fact that the value of exports exceeds the volume means that there has been an increase in average product value exported.

In addition to the export data, there is also an issue of the level of satisfaction with the services provided by the CBEF. In that regard we note that the CBEF conducted a survey of its members in the spring of 2000. The results of the CBEF survey are highlighted below:

- 13 of 14 members were fully satisfied with the services provided by the CBEF
- Members stated that over 58% of their current exports outside of the USA can be attributed to CBEF's market building and information services

Members of CBEF want the federation to continue to help them to address duty and tariff issues as well as to provide market intelligence.

Export Market Development Conclusion

Our performance benchmarking method fundamentally looks at three considerations:

- Did the program undertake the tasks which it was expected or granted to do
- How well did it perform those tasks
- Did it meet its goals

With regard to the first consideration, the evidence and documentation of CBEF's operations associated with the Export Market Development Component of BIDE shows that the expected tasks were undertaken (see Appendix B). The BIDE export programs were initiated and are underway essentially as ongoing, working ventures. These ventures have served to enhance the effectiveness of Canadian exporters by serving two broad functions:

- laying the ground work for Canadian exporters by increasing the awareness of Canadian beef in off-shore markets
- providing in-country infrastructure for Canadian exporters

The BIDF funding has allowed the CBEF to implement a multi-year strategic plan designed to garner its desired results. The funds have been used to establish market representation in Korea, Hong Kong, Taiwan, China and Mexico. The funds have also been used to increase their market development efforts in Japan.

The question of how well CBEF has performed these tasks can be answered by the comments of its members. Members are fully satisfied with CBEF's performance. The most interesting measure of its performance is that members reported that over 58% of their current exports outside of the USA can be attributed to CBEF's market building and information services. This shows that the CBEF, through the BIDF funding, has added value and made a contribution beyond what would have been accomplished without the programs in place.

Finally, we conclude that the Export Market Development component did in fact meet its goals. In that regard, we note the tables and charts above. The data clearly shows the strong growth in exports since the BIDF initiatives were undertaken. In 1995, the years that funding began, beef and veal exports to Asia and Mexico were 21,709 tonnes (\$106 million). Annual exports have increased by around 250% over the following four years. There is no question that this growth is going to continue. Based on the CBEF member feedback as well as the extra-ordinary growth since 1994 compared to pre-1994, a logical conclusion is that the growth was due in large measure to the BIDF funding.

As with many aspects of BIDF, the program funding allowed the industry to take advantage of its competitive advantages. That is, the export component provided the infrastructure, promotional and logistical support that allowed Canadian exporters to conduct business in an effective manner. Another way to say this is that the BIDF program laid the groundwork for the current export growth. Some Canadian firms may never have been able to take advantage of their competitive opportunities overseas.

From our perspective, the key contribution to the industry of the BIDF Export Component is the growth in the ratio of off-shore versus US exports. Recent trade actions by the US against Canada have shown how vulnerable Canada is as a result of its reliance on the US market. The growth of beef exports to countries outside the US is one of the Export Component's most notable contributions to the Canadian beef industry.

TRAINING AND TECHNOLOGY

Background

The objective of the training and technology component of the BIDF has been "to encourage, manage and support technology transfer activities and projects that will contribute to the goals of 100% customer satisfaction for beef tenderness, improve the safety and quality of Canadian beef and improve the knowledge within the industry that will build on Canada's natural advantage in beef production."

The majority of projects funded in this component were administered by the Canadian Cattlemen's Association Quality Starts Here program, originally named the "Canadian Beef Industry Quality Assurance and Product Safety Program". This program arose from the vision articulated by the beef cattle industry to be recognized as #1 for quality and safety. Quality Starts Here has focussed on maximizing quality, improving returns to all sectors of the industry, and establishing procedures at the production and processing stages to ensure a safe and healthy product. A management group comprised of representatives from the major stakeholders was created in January 1995. This group is responsible for developing the Quality Starts Here program, managing its' activities, coordinating working groups, funding issues and communicating with stakeholders and industry. Several working groups were formed around specific topics and were responsible for developing and leading projects. Annual workshops are held to solicit comments on projects funded to date, review newly funded projects and set strategic direction for the forthcoming year. Additional workshops were held to review and discuss the impact of the Beef Quality Audits. The Quality Starts Here program received administration funding through this component of BIDF.

Project Output

A total \$1,870,962 was allocated to the Training and Technology component, which funded 35 projects. The output of these projects is discussed below.

Timeliness of Projects

Overall, projects funded in this component were initiated, developed and completed in a timely manner. In Year One 17 projects were funded and several projects were completed. Most importantly, the baseline Beef Quality Audit was completed, which had ramifications for the strategic direction of Quality Starts Here and the identification of areas requiring further study. In Year Two a further ten new projects were funded or initiated; in Year Three another ten new projects were funded or initiated; and in Year Four several previously completed projects were revisited and updated. Several projects, such as the web site, the responsible pharmaceutical use working group and the development of education and extension material were initiated in Year One and, due to their nature, ongoing throughout the remaining three years.

There are only two projects that have not achieved their stated objectives. The non-fed injection site audit has had difficulty assembling valid data needed to complete an analysis, and consensus has not been achieved in an attempt to develop loading densities cards for cattle haulers.

Quality Improvement

Prior to the BIDF becoming fully operational a Beef Quality Audit had been initiated by industry stakeholders. The audit was completed once BIDF was in operation and the Quality Starts Here program was also up and running, 1995/96. The purpose of this audit was to determine the baseline level of quality defects in Canadian cattle. The results from this audit were used in two ways: to identify areas requiring research, and to increase producer awareness of quality issues and encourage improvements in management to reduce these losses. These results therefore had implications for the Quality Starts Here program in developing its strategy and deciding which projects should be undertaken. Specifically, several projects aimed at reducing bruising and injection site lesions, through both research and communication to stakeholders, were initiated as a consequence of the audit results. These projects included the following:

- Injection Site Audit at Retail (Fed Cattle)
- Cattle Handling - Bruising
- Literature Review & Analysis of Bruising Factors
- Cattle Handling and Hauling Training Program
- Cattle Handling - Tracking and Reducing Cattle and Carcass Bruising Through the Use of Management Improvement Tools
-

The results from these projects have been utilized in fact sheets that have been distributed to industry stakeholders.

The second audit was a repeat of the original baseline audit, intended to monitor progress in improving beef quality and then develop new educational material and identify incentives to encourage improvement. This audit took place in 1998/99. The results of this audit provided some indication of the impact of the Quality Starts Here program, and again identified areas that require further work. (The results of this audit will be discussed further in the Impact section).

Good Production Practices/Recommended Operating Procedures

Several projects related to the development of good production practices were funded and completed. The Feedlot Good Production Practices project was completed in Year One and resulted in the development of a manual on feedlot good production practices based on HACCP principles. In Year Four the manual was revised and updated. 4,500 copies of the original manual have been distributed and 50,000 copies of the revised edition are available for distribution.

Cow-calf good production practices were also developed and published, and manuals first distributed in Year Two. 6,000 of these manuals in binder format have been distributed. The manual was revised and updated for 1999/2000 and 75,000 copies printed for distribution.

A manual on good production practices for feed preparation was developed to provide producers who mix feed on-farm with a set of HACCP-based guidelines and record keeping recommendations to ensure the proper mixing of feed, particularly when medication is incorporated. Twenty thousand copies of this manual are available to those producers who have on-farm feed mills.

Factsheets have been developed to supplement the Good Production Practices manuals to deliver the key messages on the results of injection site lesions for both site and material injected. Information on the economic impact on carcass values and recommended practices to minimize the damage are included on the factsheets. 10,500 of these factsheets have been printed and are in the process of being distributed.

Recommended operating procedures for feedlot animal health was developed by the Alberta Cattle Feeder's Association in Year Two to provide a detailed guideline for feedlots wanting to develop and implement quality assurance programs in the area of animal health. Workshops were used to introduce the material to the industry, and manuals were completed and distributed. The material was revised and updated in 1999 to follow HACCP principles.

TRAINING

One of the first projects completed in this component was the development of the Alberta Cattle Feeders Association "Quality Assurance Pilot Course and Evaluation". This program was designed to provide training and accreditation to the feedlot industry for everything from basic skills to management training. The pilot program was well received by participants and industry and resulted in the development of an instructor's manual, case studies, homework and video, which is available for use by the industry. This information will also be used in the development of a complete training curriculum for producers.

Funding from this component was also used to identify the information needed for a cattle handling & hauling training program. This information has been developed into a training manual and course trainers are currently being trained on a regional basis.

Improving Food Safety

One of the first programs funded in this component was the development and implementation of HACCP systems for beef carcass dressing processes. Stakeholders at the time realized that HACCP was going to become the standard for the industry and was pro-active in developing and implementing these systems. This meant that the industry was prepared when HACCP use was legislated by the federal government.

The Medi-Dart Gun Study Project was undertaken to determine if this method of delivering medication has an impact on the both the quality of a carcass and to determine if residue level is affected. The results of this study were published in a scientific paper and have become part of the general recommendations made to producers.

The Cull Cow Study, completed in Year Two, was initiated to determine the prevalence of VTEC, E. coli 0157:H7 and Salmonella in the feces of fed and non-fed cattle at slaughter. The results of this study were published in a scientific paper and have also become part of the database of information available to the Quality Starts Here program

The Responsible Pharmaceutical Use Working Group conducted a study with regard to veal in order to raise awareness of the effects of the banned product clenbuterol and eliminate its use. The Group also worked to develop a national protocol in an effort to deal

with appropriate product use and raise the awareness of the federal government on the issue of active pharmaceutical ingredients importation. Much of this work is ongoing.

A group of experts from each management sector of the cold chain (the chain that takes beef from the packer to the retailer, along which it must be kept chilled) was assembled in 1997 to address any existing gaps in the chain that could be expected to increase the safety of Canadian beef products. Data was collected at strategic points in the food continuum, from which a Good Production Practices manual for the entire sector will be produced and distributed.

A foodborne pathogen workshop was held in May 1998 to discuss the most important issues relative to food safety. As well, presentations were made on the most recent research results on pathogens identified at the production level. Proceedings from the workshop were published and circulated and a number of specific research areas were identified.

To ensure Canadian standards were well understood and HACCP-based activities recognized by the U.S. beef industry, the Canadian Cattlemen's Association was a charter member of the International Meat & Poultry HACCP Alliance. As the Food Safety Enhancement Program in Canada has matured, membership in the Alliance was deemed to be unnecessary, and terminated at the end of 1999.

A survey of veterinarians, packers, wholesale and retail merchandisers was used to determine the prevalence of broken needles in beef and what methods these stakeholders are using to detect and reduce the risk of such physical hazards in the beef chain. The survey data and results indicate that there is a low prevalence of broken needles. The data contributed to research and development of a better technology to further reduce the incidence of this hazard, and also to a fact sheet that was distributed in late 1999.

In 1999 the Water Quality Working Group was initiated. The goal of this Group is to determine the current knowledge level concerning water quality and identify any gaps in water quality management, specifically as it relates to government regulations. The ultimate objective is to use this information to develop a Good Production Practices manual for water quality management.

TECHNOLOGY

The Computer Vision System Beta Test project was initially funded by this component to determine if it could be commercially viable. When the decision was made to pursue commercialization of the technology, funding was granted from the Unallocated Component. A more detailed description of the project is therefore found in the discussion of the Unallocated Component.

A task force on irradiated beef comprised of individuals from the scientific community, consumers association and government was assembled and a petition was submitted to Health Canada in May 1998. At this time a decision regarding approval of irradiation has not been reached.

Communication/Extension/Education

In addition to the Good Production Practices and Recommended Operation Procedures Manuals that have been distributed, several other communication, extension and education vehicles were developed and utilized. The web site for the Quality Starts Here program received funding in order to improve access to information for both producers and the public. Producers are able to view the table of contents of the ROP and GPP manuals, as well as environmental and health information. The mission of the Quality Starts Here program and a description of several projects funded by the program are also available on the website.

Specific slide show presentations on Hide Damage, Injection Site Lesions, Bruising, poor Grade/Off Weight, condemnations, Liver Abscesses, Extra Label & Penicillin, and Food Safety were printed and distributed free-of-charge to key stakeholder groups across the country. The goal of developing these presentations was to communicate key information on quality and animal health at the grassroots level and to increase the level of ownership of the Quality Starts Here program and its key messages and objectives. Sixty binders containing these slide shows have been distributed.

The Education & Extension Material project included a broad range of initiatives aimed at delivering key messages to the various industry sectors and getting information directly into the hands of producers. This included printing the Beef Quality Audit Executive Summaries, the initial run of colour fact sheets, and ongoing printings of the Quality Starts Here brochure, which is included with every Quality Starts Here mailing. Other items include a laminated poster for injection techniques for beef cattle, of which there are 5,000 available.

The Quality Starts Here program helped supply content for the development of "cheque stuffers" on specific topics such as bruising, non-ambulatory, and cancer-eye. These were distributed across Canada to increase awareness and improve production practices.

A CD-ROM was developed in order to provide key information on the Quality Starts Here Program in an easy to use and easy to access format. The original CD was distributed to 45 stakeholder organizations. A 1999/2000 edition of the CD has been developed, which contains the entire series of Good Production Practices and Recommended Operating Procedures, which is being distributed to stakeholder organizations.

In collaboration with other major livestock commodities, funding was provided to produce a series of video messages promoting the on farm food safety concepts that producers follow in their daily production practices. The video spots were shown on the national broadcast of The Canadian Farm, a television program produced by Carleton Productions.

The Ontario Linkages Program was a two year program that facilitated a number of alliances to promote Canadian beef in Ontario to displace beef originating from outside of Canada. Support and training was given to local retail outlets to assist with the promotion of Canadian beef. Surveys that were conducted after the program was completed indicated that a marked change (positive) in the image of Canadian beef had occurred. As well, this program had more lasting effects as it led to the development of branded beef programs in Ontario, such as the A&P/Dominion Stores Beef Beyond Belief and Flanagan's

'Quality Selection' that continue to operate.

Scope and Reach

The projects funded by the training and technology component have addressed beef quality and safety issues faced by all sectors of the industry - from cow-calf producers to feedlots to transportation to packers. In many cases, individual projects have involved more than one sector of the industry in working to improve beef quality and safety. This component, therefore, has had a very wide scope.

There are approximately 100,000 beef producers in Canada, which presents a challenge for the Quality Starts Here program when information needs to be disseminated to producers. The Good Production Practices and Recommended Operating Procedures Manuals are a good example of the program working to get this information into producers' hands, as 75,000 of one of the manuals have been distributed. Other manuals and fact sheets have also reached tens of thousands of producers. Development of the website and the CD-ROM is another example of how Quality Starts Here has attempted to make information available and accessible to producers. Overall, the program has been successful at reaching those in the industry who need and want the information that has been developed.

Impact of Projects

The training and technology component projects have been successful in addressing several issues related to improving beef quality and safety. One of the most important results of the work of the Quality Starts Here program is a recognition and decision that food safety is the most important aspect of their mandate. This is a result of the industry coming together to discuss beef quality and safety issues and having to decide what the strategic direction of the program and the industry should be.

In addition to the impacts projects have had within the beef industry, the Cold Chain Management Project has had an impact outside of the industry. This project brought together experts from each sector of the cold chain (packers, truckers, retailers, food service, etc.) so they could work together to improve food safety throughout the chain. This was a ground-breaking collaboration in the food processing/food retailing industry, as it was the first time the entire continuum for a specific commodity worked jointly on a proactive food safety initiative. It is anticipated that this project will form a template for other meats and commodities to implement the same type of initiative.

The Beef Quality Audit conducted in 1998/99 provides some indication of the impact and success of the Quality Starts Here program. This audit was done after the program had been in place for three years, and although several projects had been completed and the information distributed, this is a relatively short period of time, especially when it comes to increasing awareness among 100,000 producers. Some of the first projects that were undertaken had to do with reducing bruising and injection site lesions. The audit shows that the incidence of bruising and injection site lesions both decreased relative to the first audit. A good portion of this decrease should be attributed to the work of the Quality Starts Here program, as this is where its efforts to increase quality had been concentrated. In turn, an increase in quality means increased returns to producers. Overall, the audit

results indicate that while some progress has been made, more work and more time is needed to affect significant improvements.

On the safety side, studies that were completed have resulted in new information being distributed to producers and packers. Implementation of HACCP principles at the producer level will also have a positive effect on the safety of Canadian beef.

The overall impact of the projects funded in this component has been to increase beef quality and safety. This has partly been achieved through research, but more importantly through effective communication and dissemination of information to various sectors of the industry. The biggest challenge faced by the beef industry and the Quality Starts Here program is not determining how quality and safety can be improved, but getting this information into the hands of those who need to implement it. In this regard, the program has been successful, as evidenced by the demand for the various fact sheets and producer manuals that have been developed. The results of the second Beef Quality Audit provide some feedback which indicates that the information generated and distributed by Quality Starts Here has been implemented successfully.

RESEARCH COMPONENT

The Alberta Agricultural Research Institute (AARI) was contracted to administer the research component of the Beef Industry Development Fund in February, 1995. AARI was responsible for managing the project review process in close consultation with the Project Review Committee. This Committee consisted of industry people and scientists from across Canada, selected jointly by the Steering Committee of BIDF and AARI. The Chairman of the Project Review Committee and a number of the Committee members were also members of the Steering Committee of the Fund, which provided a direct communication link between BIDF and the research component.

Research proposals were invited by AARI from across Canada annually. Information on the program and application forms were sent out to private sector research organizations, universities and government research centres. Once the proposals were received, the Project Review Committee met to review new applications and progress reports and recommend projects for funding. These recommendations were submitted to the BIDF Steering Committee for final approval of funding. Once approved, contracts were signed with each research organization to implement the projects.

In selecting which projects were to be funded, proposals were evaluated by the Project Review Committee on the basis of their scientific merit and expected economic contributions to the Canadian beef industry. Each proposal was reviewed in detail by an industry member and a scientist in order to gain a balanced view of the value of the project. At the general Committee meeting, the scientist provided an opinion on whether a project was based on 'good' science and sufficiently well designed to lead to a valid scientific conclusion. The industry member provided an assessment of the potential for the project to solve a significant industry problem, develop an innovative technology, or create a new product that could lead to economic benefits for the beef industry. This process ensured that projects which received funding would result in the maximum benefit for the industry.

Timeliness of Projects

Projects that were funded in this component progressed and/or were completed according to schedule. The relatively long-term nature of the funding available made it possible to approve several multi-year projects, which were reviewed annually to ensure that the desired progress had been achieved. Overall, there were no major problems with the timeliness of projects.

Project Results

A total of 44 projects were funded from \$5.6 million allocated to the research component, selected from more than 125 proposals. The projects that received funding from this component are by nature scientific and very technical. This does not lend itself easily to a discussion of the specific output from each project. Therefore, the results of the projects will be discussed according to the general topic area that they fall under.

Following the review of projects funded in the first year, the Project Review Committee determined that these and future projects could make significant contributions to:

- Reduction of bacterial contamination through new approaches for an integrated food safety system;
- Improved customer satisfaction by enhancing beef tenderness; and
- Improved market access through the application of biopreservation technology to beef so that products can be sold in the domestic market or abroad with predictable, extended storage life and enhanced product safety.

Food Safety Improvement

A total of seventeen projects aimed at reducing bacterial contamination and enhancing food safety were funded. The projects involved research ranging from farm level to the packing plant. This included the investigation of pathogenic organisms in the environment to early detection of infected animals (before they reach the kill floor) and the latest methods of controlling these organisms from contaminating beef products. Much of the research was directed at developing new technologies for controlling the incidence of E. Coli 0157:H7 and other harmful microorganisms in beef. Specific project work included development of a vaccine to prevent contamination of cattle by E. coli, the effect of feeding management of the shedding of this organism by feedlot steers, implementing the HACCP system to reduce disease incidence and new strategies based on a genetically engineered indicator organism for ensuring the microbiological safety of beef.

Improving Beef Tenderness

Twenty projects were approved to examine various approaches for improving product quality, specifically tenderness, and customer satisfaction. The central focus of the quality studies was to explore new ways of improving beef tenderness and meat quality in general. The projects involved work ranging from identification of genetic markers for beef tenderness to designing feedlot rations that optimize growth and carcass quality and the effect of transport stress on tenderness.

Improving Market Access

Reducing bacterial contamination and improving tenderness are important factors in increasing the marketability of Canadian beef by adding to the reputation it already enjoys

in world markets. However, an additional seven projects were funded in order to further strengthen marketability by directly addressing specific market access issues. One of these projects examined how beef consumption contributes to the total amount of zinc, vitamin B12 and protein in the diet of adolescents, and then evaluated this group's knowledge and attitudes concerning beef. The result was information on why adolescents do or do not eat beef, which in turn can be used to change negative attitudes and reinforce positive attitudes. Another nutrition-based project was undertaken with the goal of being able to counter claims that all saturated fats from red meat are nutritionally undesirable and therefore to be avoided. Providing logical practical dietary advice based on scientifically demonstrated beneficial effects would help to stimulate the sale of beef products through a more positive consumer attitude. Other projects in this area included the investigation of biopreservation strategies for extending the storage life of beef, the functionality of selected beef cuts for further processing and new instruments for risk sharing.

The results of studies completed in this component have been published in scientific papers when permitted, and have been distributed to research organizations, government extension agencies, the Canadian Cattlemen's Association, interested beef industry stakeholders and universities and researchers across Canada. In turn, these results can be used by researchers in developing further research projects, and applied, where possible, by stakeholders.

Impact

Perhaps the most significant impact this component has had on the beef industry is the determination of priority research areas that will provide economic benefits to the industry. Prior to the establishment of the research component of BIDF there was research being conducted on various aspects of the beef industry, however this research was not focused; researchers were essentially doing their own thing. By bringing together people from the industry side and people from the scientific community, the intellectual capacity of the industry as a whole established priorities and became focused on issues of primary economic importance. These issues are reflected in the three main areas that the projects were concentrated on, as discussed above. This is a significant achievement, especially when there are limited research funding dollars available, as is the case in Canada, because the limited dollars have a greater impact when they are concentrated into only a few areas.

With regard to impact from the studies themselves, several significant accomplishments and scientific achievements were realized. On the issue of beef tenderness, the gene that expresses tenderness (through marbling) was identified. This was ground breaking research from two perspectives. First, this type of research has not been conducted anywhere else in the world, and therefore stands to provide the Canadian beef industry with a competitive edge. Second, the researcher who conducted the study is a crop scientist who had used the same techniques to identify the genes that influence the oil composition of canola. This knowledge transfer from the plant world to livestock is an important accomplishment that paves the way for further research of this type.

The projects designed to enhance food safety and reduce bacterial contamination have also had a significant impact, both in the industry and in the scientific community. The work to develop a vaccine for E. Coli is considered ground breaking research and is

beginning to approach the commercialization stage. Once such a vaccine is commercialized, it will benefit the entire industry through improved food safety, and obviously has a worldwide market with significant revenue possibilities.

The funding provided by this component has had a positive impact on the food safety of beef products and on the quality of beef products, and as additional research is completed these impacts will become larger. However, a major part of the reason that there has been an impact at all is because the industry was able to come together with the scientific community to establish research priorities. These priorities will continue to have a long-term positive impact on the industry, and will be enhanced by the completion of further research in these priority areas.

UNALLOCATED COMPONENT

The 'Unallocated' Component of BIDE exists in order to provide funding to high priority projects that do not readily fall into any of the other four components. We see the unallocated component, which amounts to \$2.1 million, as a component of BIDE that provides flexibility to the Committee. It provides the Committee with the ability to support high priority initiatives that might otherwise not be funded because they do not fit exactly into one of the other components.

With that said, we will evaluate these initiatives to determine whether they advance the industry toward the overall purpose and vision of BIDE. As a reminder, the purpose and vision of BIDE were:

Purpose: to support activities that would promote and enhance the competitiveness of the Canadian beef industry, domestically and abroad.

Vision: to have Canadian high quality beef recognized as the most outstanding by domestic and world customers.

The following projects were funded by this component.

Canadian Cattle Identification Agency

This project received a total of \$956,500 in funding, which was used to first develop a business plan for a national identification and traceback strategy for the Canadian cattle industry, and then to underwrite the two year start up costs for the CCIA. The reason for having the CCIA and a national identification program is to be able to trace beef from the farm to the consumer. The program itself works by ear tagging cattle with specific ear tags when they leave their herd of origin. The tag stays on the animal to the point of carcass inspection in the packing plant. If a problem is detected, the tag allows for a more efficient search to identify the source of the problem, by starting at both the point the problem was detected and the herd of origin. The program begins January 1, 2001 with all cattle to be identified by July 1, 2001.

Impact

This project has been a major success for BIDF and for the industry in general in that it has moved from an idea to start-up and implementation in only a few years. The CCIA will provide for greater quality assurance throughout the beef production system for both domestic consumers and export customers. This fits very well with the purpose of BIDF, as enhancing quality assurance will promote and enhance the competitiveness of Canadian beef. Overall this project is an important and significant step toward achieving BIDF's vision.

CVS Grading Camera and Beta Test

This was another technology development project, funded at a cost of \$828,589. The goal of this project was to develop the Computer Vision System (CVS) Grading Camera and then test it to determine if it is commercially viable. Specifically, a portable CVS unit with data storage capabilities or wireless data transfer capabilities was developed, along with an integrated data transfer system to and from the camera that was located on moving and stationary rails. The CVS is a two camera system that takes images of the carcass and ribeye and then determines the yield, marbling, colour and grade, all in 1.5 seconds. Tests showed that the system is very accurate and very consistent, and was therefore moved to the commercialization stage. CVS has been installed and is on line at six Cargill/Excel plants in Canada and the U.S., in a PM Beef plant in Wisconsin and at Sam Kane plant in Texas. Three plants in Australia are scheduled to install the system and a further 12 plants around the world are either commercially testing CVS or have scheduled it for site planning. The system has been submitted to the Canadian to be used as the official grading system.

The partners were the Canadian Cattlemen's Association, the Lacombe Research Centre, RMS Research Management Systems, Inc. and the Canadian Meat Council. This technology will result in consistently accurate grading of beef carcasses, which in turn means more consistent quality down the chain to the consumer.

Impact:

This project has been a resounding success for two reasons. First, the technology was successfully developed and commercialized and is considered to be revolutionary. Second, the technology has been adopted quite quickly not only in Canada, but around the world by the largest beef processors. This is an example of various sectors of the industry - packers, researchers, producers - working together to strengthen the entire industry. The success of this project was recognized in June 2000, when the partners in the development of CVS received a Federal Partners in Technology Transfer Award in recognition of the 'distinguished collaboration' between the partners for the successful development, transfer and commercialization of the

CT Probe Re-engineering & Beta Test

This project was one of technology development, which received \$397,000 in funding. The Connective Tissue (CT) Probe measures the amount of collagen in a beef carcass, which is an indication of tenderness. The goal of the project was to initiate testing of the apparatus to determine if it could be commercialized. The results obtained from testing were deemed to be too inconsistent, and no further funding was granted to the project.

However it is worth noting that the technology is still being developed by the researchers who worked with it. Changes have been made to the Probe and its software that have resulted in more consistent results. The researchers believe that the Probe can still be commercialized.

Water Wind & Fire TV Film

The creation of this film received \$40,000 from BIDF. The film was completed and aired in December, 1997. The expected results of the project were:

- To foster an appreciation and respect for nature.
- To support a conservation ethic through sensible stewardship and sustainable resource management.
- To encourage understanding of issues surround habitat conservation in the prairie ecozone.
- To expand the public's perception of their role in habitat conservation.
- To increase the public's awareness of cattle producers' environmental stewardship ethic.

Cows & Fish Program

The Cows & Fish Program received \$4,500 from BIDF and was coordinated by the Canadian Cattlemen's Association Environment Committee. The objective of this project was to address the interest across the country in education resources regarding the environment. Development of a user's manual and video for the Cattle, Dogs and Kids interactive program, script and key concepts would be of considerable value in promoting the concept and training people to deliver the interactive across the country.

The instructional video and accompanying manual have been completed. The game show interactive has received great review and been successfully integrated and used at the Multicultural Centre in Stoney Plain as part of their regular wetland and water education programs. The program will continue in 2000/2001.

Caring for the Green Zone - Your Legacy

This project was also coordinated by the CCA's Environment Committee, and received \$2,500 in funding. The expected results of the project were to have Alberta Environmental Protection train staff at locations such as the Sam Livingston Fish Hatchery, the Western Heritage Centre and the Bar U to develop youth education riparian management programs that would fit the information being given to teachers. It was planned that the information would be delivered to teachers through workshops, accompanied by considerable resource material.

The project has continued with some delays in development, namely changes in curriculum focus. Revisions and updates are being planned and the program will continue in 2000/2001.

Impact:

These smaller projects will contribute towards the purpose and vision of BIDF by improving the awareness of the high quality of Canadian beef in the domestic market.

Unallocated Component Conclusions

The projects which were focused on environmental issues such as caring for the Green Zone and Cows and Fish do not clearly fall into the purpose and vision or even the priorities of the BIDF. At the same time, however, we agree that these issues are industry priorities that need the attention of industry leaders.

With regard to the other projects, we can clearly see how they are focused on achieving the purpose and vision of BIDF. These projects, while not easily classified in either of the four components of BIDF, are definitely targeted towards industry competitiveness, customer satisfaction, food safety and birth to plate information.

We conclude that these projects were and are important industry initiatives that are necessary steps in moving the industry toward the vision outlined by BIDF.

BIDF AND INDUSTRY COMPETITIVENESS

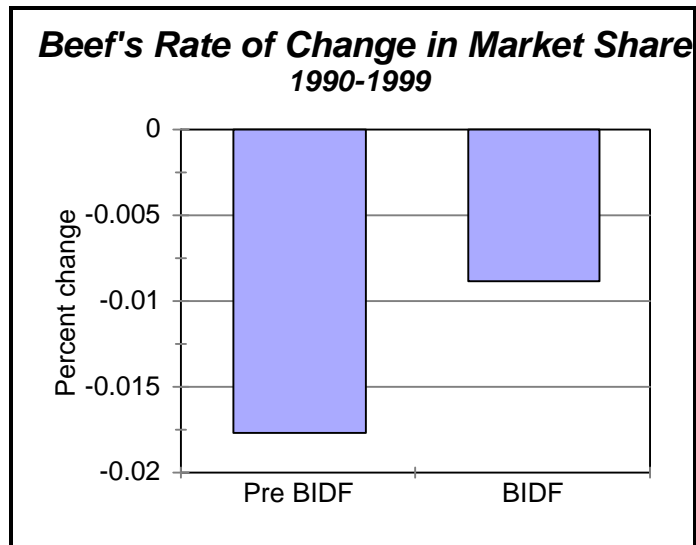
Canada's Task force on Competitiveness has defined competitiveness as "the sustained ability to profitably gain and maintain market share." The George Morris Centre has built on that work and developed a framework in which industries can be assessed with regard to the key factors contributing and indicating competitiveness. The most important competitive indicators are market share and profits. The factors that cause or are the drivers of the competitive state of an industry are: technology, productivity, inputs and cost, product, industry structure, demand conditions and linkages.

The first point to note is that the four components of BIDF directly target most of the factors that cause an industry's competitiveness. The domestic market development initiative sought to change or improve demand conditions and to improve existing or develop new products. The export market development initiative sought to improve export market demand conditions. Both export and domestic initiatives ventured to build linkages within the industry. The research and training & technology components were targeted towards technology development, productivity, products and costs. Furthermore, the ultimate goals of the BIDF are greater returns to the industry and market share. These in turn are the two defining points of competitiveness.

As such, we can say at the outset of this section that the BIDF was focused on the right end points and the right means to that end point.

With regard to the end points, we should look at market share from two perspectives, domestic and international. First from the domestic perspective we have to consider changes in beef's market share relative to the other major meat and poultry products, namely chicken, turkey and pork. In that regard, we have to note the context of beef's market share situation. During the 1980's and early 1990's beef consumption and demand had been declining at an accelerating rate. The principle measures of demand are consumption and price. In many years both consumption and real prices declined. That is a sign of very poor demand. Over the same time frame beef's market share on a per capita consumption volume basis relative to pork and poultry were declining rapidly.

Through the mid to late 1990's we note that beef's market share has continued to decline but at a much slower rate than in the early 1990's. The following graph looks at the decline in beef's market share by volume in the 1990's by focusing on the BIDE and Pre-BIDE years.

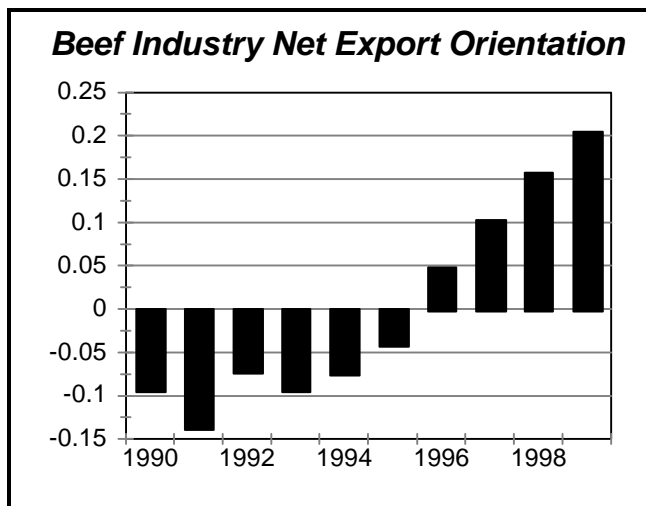


Source: Statistics Canada and George Morris Ctr

As with most aspects of the BIDE program, it is not possible to ascribe cause and effect between the actions of the program and results in the industry. With that said, the slowing of the rate of decline in market share is a major industry development. Given that the BIDE initiatives, with full industry participation were all targeted towards that goal, we believe that the program played a role in the change.

The international perspective of market share is very different from the domestic perspective. In the international situation, we are interested in determining changes in export or domestic market share of the particular product. We rely on the net export orientation ratio, the difference between an industry's exports and its imports, expressed as a percentage of the average of domestic production. The sign of this measure indicates immediately whether an industry is a net exporter or importer and its absolute size indicates the relative importance of trade.

In this regard, the Canadian beef industry has undergone a major change in orientation. The following graph shows the change in export orientation over the last ten years. The vertical axis on the graph is a measure of the export orientation ratio.



As can be seen, the industry has moved from a net import to net export orientation. Furthermore, the net magnitude shows that the relative importance of trade has increased along with the growth in exports.

As a proven measure of competitiveness, this marks a startling transition. Furthermore, we note that prior to the introduction of the BIDE program, there was little or no movement in this competitiveness measure.

Competitiveness Conclusion

The BIDF initiatives and programs utilize what the George Morris Centre has singled out as the key factors that cause an industry's competitiveness. BIDF programs focus on technology, productivity, inputs and cost, product, industry structure, demand conditions and linkages. As such, given that competitiveness was a key focus of BIDF, we conclude that the tactics and directions were well planned and logical.

The next point then is to determine the relative success of those initiatives. In that regard we look at domestic and international market share. As noted above, on the domestic front, the market share challenge was a huge problem. We can see, however, that there has been a gradual but measurable change towards an improved market share for beef. With regard to international trade, the change has been remarkable. Canada has moved from a net import orientation to a net export orientation over the last ten years.

In summary, we can conclude that over the past ten years, the Canadian beef industry has become more competitive. The major change in competitive improvement came about in the mid to late 1990's. This time corresponds to the BIDF initiatives. While we are not saying that BIDF was solely responsible, we can say that the initiatives did make a positive contribution to the movement towards increased competitiveness.

APPENDIX A: Product Development Initiative Project Outlines

The following section provides a summary sketch of our findings and analysis regarding the specific projects of the PDI.

The table below provides an outline of the completed projects as well as a brief note on the results of the project. The table also includes the GMC conclusions as to the reasons for funding the project (ie., what PDI goals and objectives were targeted).

Project	Result	Primary Reasons for Funding
Fully Cooked Meat Loaf (Better Beef)	Product launch unsuccessful but home meal replacement sector for health care being investigated	1. New Product 2. Value Adding
Processing of Restructured Steaks and Roasts (FNA)	New category for beef established. 4-5 new products developed including a new steak for fast food. Processor deal being negotiated for \$30 million with future revenue stream of \$40-50 million/yr. Two new hires.	1. Adding value to underutilized cuts 2. Stimulate product development
Breaded Whole Muscle Veal (Holly Park)	Successful launch, line extensions planned. Invested in equipment and production facilities. Negotiations underway with major retailer. \$25 K in revenue and 4000 lbs raw hip processed in year 1 with minimum 20% per year increase. Revenue potential could reach >\$200 K/yr. Three new hires.	1. Product Development

Beef at Food Service (JD Sweid)	Pot Roast launched to US market, short ribs imminent. Julienne Beef marketed to Taco Time, potential as pizza topping. Sales confidential but have reportedly met objectives of 4000 kg/mo (per BIC). Utilizes brisket, four quarter or hip cuts. Increased utilization of some production equipment. One new hire.	N/A
Long Term Care Market (Nestlé's)	Several new beef meals using Canadian top butts and sirloin which could be reheated were developed for this market. The knowledge was transferred to Nestlé's airline business where 15-20 of the 70 + new meals they create each year are using the technology and more beef meals are being sold.	<ol style="list-style-type: none"> 1. New product development 2. Adding value 3. Increase share through availability of new products
Stouffer Stir Fry Kits (Nestlé's)	Product withdrawn after retail launch due to price point and low turnover, and higher than anticipated production costs using a Canadian processor.	<ol style="list-style-type: none"> 1. Product Development 2. Value added 3. Increase beef's share via availability
Create-A-Meal (Pillsbury)	Met company objectives. A fifth new product was recently launched, using beef as a complement. (First time launch for Canadian branch). Household penetration of 24% in 3 years. Sales confidential.	<ol style="list-style-type: none"> 1. Support for products that show greatest potential
Quick Service Ground Steak Sandwich (A&W)	Project showed that initial concept was not acceptable to consumers, thus saving further investment.	N/A

<p>Sirloin Steak Slices Philly Style (Best Western)</p>	<p>Three new introductions have resulted; sirloin steak slices, centre-cut sirloin roast and solid muscle steak sandwich. Distribution trial through Harvey's. Revenue from the steak sandwich and roast products currently at \$200 - \$260 K. 50,000, 3oz steaks per week will be sold. Apx 25 % of the 1.6 million lbs/yr of tri tip sirloin, ball tip sirloin and sirloin roast will be used to produce these 2 products. The rest goes to cubes, ground, etc. 3 new production hires.</p>	<ol style="list-style-type: none"> 1. Adding value to underutilized cuts. 2. Increase portion of value added products available to foodservice
<p>Halal Beef (Al Safa)</p>	<p>Has met and surpassed US and Canadian sales targets. Target was 420,000 lbs by Jan 2000 and 7 beef products (per BIC). Sales volumes confidential. Three new hires.</p>	<ol style="list-style-type: none"> 1. New Product Development 2. Increase portion of value added products available to foodservice.
<p>Initially Certified Angus; Introduced as "44th Street" brand (Retail Ready)</p>	<p>Sales have doubled between launch (Nov 99 and Jan 2000). \$2.5 million projected for 2000 with growth up to \$10 million in 5 years. 300,000 lbs of chuck roll and top butt to be used in 2000. Two new hires in marketing thus far with projections to 6 in 5 years. Estimated 5 new production hires so far. Sales are "new" beef – replacing food service, chicken and pasta prepared meal solutions.</p>	<ol style="list-style-type: none"> 1. Adding Value to Underutilized cuts 2. Increase portion of value added products to retailers

Szechwan Beef (Capital Packers)	Have launched product in Canada and are looking to US launch. Projecting sales of 3000 lbs yr 1, 6000 yr 2. Use inside, outside, eye rounds, flats. Good potential in food service. Replaces chicken and pork. No new hires but better utilization of mechanization.	<ol style="list-style-type: none"> 1. Add value to underutilized cuts 2. Product development
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In addition to the 12 products listed above, there are at least 3 products currently in process.

APPENDIX B Outline of Expectations and Programs for the Country Specific Programs.

Export Market Development, Japan

Funding \$ 3.14 million

Expected Results

- Operate a representative office in Tokyo. The representative will provide a vital link between Canadian beef exporters and new and existing beef importers in Japan.
- Complete one VIP Beef Buyers Mission. This mission introduces the Canadian cattle and beef industry to key Japanese industry executives.
- To complete a number of targeted retail and food service beef promotions in Japan.
- To create and publish new promotional materials specifically designed for the Japanese retail and food service sectors.

Status

- Year four program has been completed.
- Year five program has been approved by BIDE Committee
- Year five program in progress

Export Market Development, South Korea

Funding \$ 1.55 million

Expected Results

- To complete a number of targeted retail and food service beef promotions in South Korea.
- To create and publish new promotional materials specifically designed for the Korean retail and food service sectors.

Status

- Year four program has been completed.
- Year five program has been approved by BIDE Committee
- Year five program in progress

Export Market Development, Taiwan

Funding \$ 753,000

Expected Results

- To complete a number of targeted retail and food service beef promotions in Taiwan.

Status

- Year four program has been completed.
- Year five program has been approved by BIDE Committee
- Year five program in progress

Export Market Development, Hong Kong

Funding \$ 1.02 million

Expected Results

- No BIDF supported projects are planned for Hong Kong during Year Five.

Status

- Year four program has been completed.

Export Market Development, People's Republic of China

Funding: \$ 262,000

Expected Results

- No BIDF supported projects are planned for the People's Republic of China during Year Five.

Status

- Year four program has been completed.

Export Market Development, Mexico

Funding \$808,000

Expected Results

- Operate a representative office in Monterrey. The representative will provide a vital link between Canadian beef exporters and new and existing beef importers in Mexico.
- To improve awareness of Canadian beef by completing a number of CANADA BEEF Seminars in Mexico.
- To complete a number of targeted retail and food service beef promotions in Mexico.
- To complete a number of Canadian food promotions and trade shows in cooperation with the Canadian Consulate in Monterrey.
- To increase the awareness and image of Canadian beef by placing specific advertisements in Mexico's beef industry publications.

Status

- Year four program has been completed.
- Year five program has been approved by BIDF Committee
- Year five program in progress

Export Market Development, Global Market

Funding \$ 443,000

Expected Results:

- No BIDF supported projects are planned for Global Markets (Canadian delivery) during Year five.

Status:

- Year four program has been completed.