



2016/17 Business Plan

Submitted to Canadian Beef Cattle Research, Market
Development and Promotion Agency

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Introduction

A portion of the funds collected by the Beef Cattle Research, Market Development and Promotion Agency is directed towards the Beef Cattle Research Council (BCRC). The BCRC was established in 1999 as an operating division of the Canadian Cattlemen's Association (CCA), the national association representing the interest of Canada's beef cattle producers. BCRC's mandate is to determine research and development priorities for the beef cattle industry and is responsible for National check-off funds allocated to research. Research and innovation are key to driving competitiveness and innovation in the Canadian beef cattle industry and meeting increased consumer demand for beef products on a global scale.

As Canada's only national beef cattle industry research agency, the BCRC has taken a leadership role in the development and implementation of the National Beef Research Strategy, working closely with other industry and government funding agencies to increase coordination, reduce duplication and to ensure priority research outcomes are addressed. BCRC's important role in identifying the industry's research priorities subsequently influences public sector investment in beef cattle research.

The BCRC overarching goals are to:

1. Identify, fund and manage beef research and technology development in strategically focused priority areas of national significance as defined by industry stakeholders from across the value chain.
2. Promote excellence in Canadian beef research and technology development by facilitating the exchange of information and expertise to encourage collaboration, discourage duplication and advocate the adoption of high standards in research.
3. Support and encourage rapid commercial adoption of new technologies to sustain competitive advantage.

The BCRC overall objectives and priorities are to:

1. Enhance consumer confidence and beef demand through research focused on improving beef quality and food safety.
2. Enhance production efficiencies through research focused on improved forage, grassland and feed grain productivity, feed efficiency and animal health and welfare.
3. Increase the dissemination of knowledge throughout the industry.
4. Ensure that sound scientific principals and risk assessment are utilized in developing good production practices, industry and government policy and standards.
5. Support research contributing to improved consumer and public understanding of Canadian cattle and beef production.
6. Encourage the development and renewal of key research infrastructure and expertise to ensure that critical research capacity is maintained.

Environment Scan

The Canadian beef industry is a significant contributor to Canada's economy. Farm cash receipts from cattle and calves were \$9.7 billion in 2014, representing 17% of total farm cash receipts. Over the period 2010-14, cattle and calves have been the second largest revenue maker for farms after canola. Together with the multiplier effect from downstream economic activity, the beef industry contributes over \$18.7 billion to Canada's GDP.

Despite numerous challenges over the past decade, the Canadian beef industry has recognized that there is a significant opportunity to grow and expand over the long-term. This is based upon the fact that Canada has abundant resources (land, water, genetics, and infrastructure), and that there are growing markets for Canadian beef globally. The Food and Agriculture Organization of the United Nations (FAO) projects global beef consumption will increase by over 7 million tonnes between 2014 and 2024. Global meat demand is being pulled by population growth, urbanization and an increasing middle class population in many developing countries.

A number of challenges need to be overcome if opportunities are to be captured by the Canadian beef industry. Expanding international market access for Canadian live cattle, genetics, and beef products continues to be a core priority for industry. There are also regulatory and policy challenges around the enhanced feed ban, new product development and approvals, labor, and other areas of importance. A shortage of labor and higher production costs continue to also significantly impact industry competitiveness. The industry is also facing competition for limited resources from other agricultural commodities and consequently must be competitive with other agricultural sectors. It must also be competitive with other major global beef producing nations that are making significant investments in marketing and research that are well in excess of Canada's investment.

There is growing recognition by the Canadian beef industry that increased investment and coordination of research to achieve desired industry outcomes is critical to ensuring the industry's long-term sustainability. Investments in beef research improve industry's ability to maintain competitiveness, positive margins and sustainably meet increasing global consumer demand in the face of increased competition for land and water resources. A study done for the Beef Cattle Research, Market Development and Promotion Agency reported that the overall return to producer check-off dollars was 9:1 and every check-off dollar invested in research delivers an average return of \$46 to beef producers.

National Beef Research Strategy and the Beef Cattle Industry Science Clusters Background

As a supporting driver of industry's sustained success, the BCRC and the Beef Value Chain Roundtable (BVCRT) have developed a National Beef Research Strategy that provides a framework towards achieving national coordination of beef research priorities, funding and communication efforts. This 2013 – 2018 research strategy is available on the BCRC website at www.beefresearch.ca.

In tandem with the development of the National Strategy, Agriculture and Agri-Food Canada (AAFC) launched the Agri-Science Cluster Initiative program under Growing Forward I and the BCRC took a leadership role in developing the Beef Cattle Industry Science Cluster. Bringing together Canada's largest industry (BCRC and Alberta Beef Producers) and public (AAFC) beef research funders, to align dollars and priorities to achieve research outcomes that will meet industry needs, provides a more comprehensive outcome-based research program that is more directly aligned with industry's vision and priorities.

The first Beef Cattle Industry Science Cluster was a four year initiative between April 1, 2009 and March 31, 2013. Industry and government funding commitments through the first Cluster totaled \$11.25 million directed to 32 research projects managed by BCRC. Every National check-off dollar was matched by six AAFC dollars.

The second Beef Cattle Industry Science Cluster (Beef Science Cluster II) is a five year initiative between April 1, 2013 and March 31, 2018, under Growing Forward 2. The BCRC is managing 26 research programs under the Beef Science Cluster II, as outlined in the following section. These projects are jointly funded by government and industry through producer check-off and partner investments. Four additional beef industry funders (Alberta Cattle Feeders' Association, Manitoba Beef Producers, Beef Farmers of Ontario and Quebec Beef Producers) are also investing producer dollars in Beef Science Cluster II.

Core Activities for 2016/17

Program Delivery and Research Priorities

Developing research priorities for the BCRC's current five year (2013-2018) funding plan under the Cluster and additional initiatives has been an extensive process that was guided by the National Beef Research Strategy. The Strategy developed in 2012, by the BCRC and Beef Value Chain Roundtable incorporates priority research outcomes identified by key stakeholders. The research programs in 2016/17, many of which are funded under the Beef Cluster II and extend the duration of the 5-year Cluster program, are directly aligned with the research outcomes in the National Strategy. Investments focus on a portfolio of research that contributes to the industry's ability to meet the growing global demand for high quality, safe beef through responsible and profitable production practices that support a sustainable future for the Canadian beef cattle industry. The following section – Beef Science Cluster II Projects – highlights the core activities.

To maintain or improve competitiveness in the production of beef cattle, 2016/17 research projects examine issues related to **animal health, feed efficiency and feed production**. One example is the development of a western Canadian disease surveillance network to provide timely information on a variety of areas such as biosecurity, disease prevalence, animal welfare practices, antibiotic use, and herd nutrition and management. Another project is to develop new feed grain varieties, with a focus on enhanced feed quality, yield and disease resistance.

BCRC research projects in 2016/17 also focus on **science-based policy, regulation and trade**. For example, antimicrobial use and resistance have received considerable negative, inaccurate attention in the media. Research will evaluate whether antimicrobial use contributes to antimicrobial resistance in cattle, downstream environments, retail beef and humans. This research will further demonstrate the Canadian beef industry's leadership role in promoting responsible antimicrobial stewardship.

Research to support science-based **public education and advocacy** will address concerns regarding modern beef production. An activity to define the environmental footprint of the Canadian beef industry will quantify the positive contributions forages and cattle make to watersheds, biodiversity, ecosystems, critical wildlife habitat, and natural carbon sequestration. This will provide a more informed perspective of the beef industry's environmental footprint and identify opportunities for improvement.

Research in 2016/17 will continue to support the **Canadian Beef Advantage** - an industry-wide, global brand strategy differentiating Canadian beef and beef products. A National Beef Quality Audit project is measuring consumer satisfaction and product quality and identifying opportunities to increase the value of the carcass. Other work is evaluating whether practical, effective food safety interventions developed under the first Cluster are being appropriately adopted and implemented in commercial plants.

The **knowledge dissemination and technology transfer** strategy initiated under the first Cluster will continue to focus on encouraging increased industry adoption of new innovations. Several cluster research themes also focus on maintaining and investing in research expertise, which is integral to ensuring that advancements in long-term research continue and that professionals are in place to respond to emerging issues in an expedient manner.

The Canadian beef cattle industry will rely on research to meet the rising global demand for food in a sustainable and competitive manner. The BCRC is confident that the collaborative investment by AAFC, provincial governments and industry, including producer National check-off dollars, will help elevate an already highly productive and successful industry to an even higher plane of competitive advantage in global food production.

Beef Science Cluster II Projects

Project #	Project description	2016/17 budget	2013/14 to 2017/18 5-yr budget
Forage and Grassland Productivity			
FRG.04.13	Innovative Swath Grazing/Increasing Forage Research Capacity	170,400	798,084
FRG.08.13	Development of native plant material (grasses, legumes) and mixtures for forage production in the Prairie Region	640,833	2,300,471
FRG.09.13	Nutritional Evaluation of Barley Forage Varieties for Silage and Swathgrazing	0	212,233
FRG.13.13	Pasture mixtures and forage legumes for the long-term sustainability of beef production	96,198	612,193
FRG.14.13	Building long-term capacity for resilient cow-calf production systems through creation of a forage industry chair supporting training and research in evaluation and utilization	291,468	930,694
Feed Efficiency			
FDE.04.13	Germplasm and variety development of barley and triticale for animal feed with a focus on feed quality, yield and disease resistance of both grain and annual forage production	300,000	1,400,000
FDE.07.13	The impact of genomic selection for feed efficiency on the cow-calf sector, performance parameters and underlying biology	0	552,874
FDE.09.13	Increased Use of High Energy Forages in Conventional Feedlot Beef Production	86,999	438,341
FDE.15.13	Prebiotic, probiotic, and synbiotic technologies for targeted applications in food safety and ruminant productivity	156,469	499,767
FDE.17.13	Improvement of cow feed efficiency and the production of consistent quality beef using molecular breeding values for RFI and carcass traits	147,867	459,267
FDE.19.13	Understanding the physiology behind changes in feed efficiency throughout the finishing period	0	657,135
Animal Health and Production Limiting Diseases			
ANH.01.13	Identifying Mycobacterium avium subsp. parathberculosis (MAP) exproteome components recognized early during infection to develop diagnostic and vaccine targets	0	190,325
ANH.12.13	Geographic variation in abundance and genetics of Dermacentor andersoni, a vector of bovine anaplasmosis	195,083	570,650

ANH.13.13	Development of a fully-automated DNA microarray chip for multiplex detection of bovine pathogens	0	289,501
ANH.21.13	Effect of age and handling on pain assessment and mitigation of common painful routine management procedures	414,324	1,351,047
ANH.23.13	Implementation of a longitudinal disease surveillance network for cow-calf operations in Western	303,600	1,067,405
ANH.33.13	Improving the barrier function of the gut: an approach to minimize production limiting disease	0	385,708

Food Safety & Beef Quality

FOS.01.13	Prevalence, Persistence and Control of Non-O157 Shiga Toxin Producing Escherichia coli	0	48,300
FOS.04.13	Identification and validation of commercially practicable practices and procedures for improving the microbiological safety stability of beef	0	460,538
FOS.10.13	Surveillance of E. coli, enterococci, antimicrobial resistance (AMR) and Enterococcus species distribution in beef operations-associated environments	497,942	1,809,625
BQU.01.13	Effect of high pressure processing on quality, sensory attributes and microbial stability of marinated beef stead during refrigerated storage	0	34,500
BQU.03.13	Genetics and Proteomics of dark cutting cattle in Alberta	0	245,794
BQU.06.13	Genetics of the eating quality of high connective tissue beef	33,868	175,088
BQU.07.13	Beef Quality Audit	182,467	780,239

Environment

ENV.02.13	Environmental Footprint of the Canadian Beef Industry	75,038	310,788
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Technology and Knowledge Dissemination

TEC.01.13	Improving Technology Transfer and Knowledge Dissemination in the Canadian Beef Industry	195,527	991,835
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2016/17 total budget for Cluster II projects = \$3,788,081

2016/17 budget directed to AAFC researchers and managed by BCRC = \$1,452,888

2016/17 budget directed to non-AAFC researchers and managed by BCRC = \$2,335,193

2016/17 industry funding to Cluster II projects = \$ 967,370

Non-Cluster Projects funded by BCRC and Industry

In addition to projects funded under Beef Cluster II, BCRC also manages and funds projects outside of the cluster based on identification of specific needs and opportunities. Non-Cluster projects that are currently funded through National check-off revenues and will continue into 2016/17 are highlighted below.

Project description	2016/17 budget
MISC.03.12 - Enhancing Barley Straw Digestibility	20,000
Canadian Global Food Animal Residue Avoidance Database-CgFarad	7,500
Research Program Development	375,000
MISC.04.13 Offal Quality	2,000
National Research Inventory	840
EU CETA Scientific Review of Microbial Interventions	25,000

2016/17 check-off and industry funding to non-Cluster projects = \$430,340

The following projects are funded by industry partners and other funding organizations and managed by BCRC.

Project description	2015/16 budget
MISC.03.15 ARI Remote Sensing Applications to Insure Individual Farm Forage Production	221,839
VBP - Enhanced VBP Plus	1,173,496
VBP Plus Program Development (GF 2)	140,408
MISC.01.16 Enhancing Traceability and Management Solutions Phase II	197,489

2016/17 partner contributions to specific projects = \$1,733,232

Verified Beef Production™

The Verified Beef Production (VBP) program identifies practical industry-sanctioned practices to manage food safety risks at the farm level and enhance confidence in Canadian beef. It outlines standard practices to address and manage against potential chemical residues, and broken needles in a carcass. VBP also outlines responsible animal health product use and assists with proactive solutions if things go wrong.



The VBP program is now working with industry stakeholders to develop additional modules for animal care, biosecurity and environmental stewardship. Based on a risk assessment approach, priority outcomes that address the most important risks in these areas have been identified. On-farm pilot testing has been completed on 45 operations across Canada. The focus for 2016/17 will be to move forward with the development of training materials for producers, train existing auditors to ensure national consistency, and begin the roll-out of the new modules with producers.

Each provincial delivery group in conjunction with their provincial cattle association has worked with Growing Forward 2 programming where it exists. This may include workshop delivery, assistance for equipment if available, and in some provinces, partial cost of an on-farm validation audit. Each provincial VBP advisory group sets priorities for VBP activity in their province or region, as funding and support allows. National VBP outlines expected outcomes and provides education components and base materials for each region to use.

Emphasis in 2016/17 will be placed on engaging in early consultation on potential changes to the next Federal/Provincial agriculture policy framework. There is need to ensure consistent outcomes for some on-farm programs across provinces. While flexibility to adapt to regional needs is understood, in the case where national programs are being developed to meet national and international customers, national outcomes are desired. Consequently industry needs to engage in discussions with AAFC, as to how the next agriculture policy framework might best be structured to support the implementation and delivery of national on-farm programs.

It is recognized that VBP must prepare for a reduced federal/provincial funding structure once modules are fully developed in the years to come. Consequently, moving forward with the implementation of the VBP+ business plan and strategy, which was developed in 2015/16 and sets out a long-term sustainable funding and delivery model for VBP will be a key priority in 2016/17. A Transition Management Committee, which is made up of provincial producer representatives from across Canada, has been formed and will begin in the coming year to guide policy, structural, and operational changes within VBP so it is well positioned to meet growing end-user demands for verification of specific attributes.

2016/17 check-off and industry funding to VBP Plus = \$123,584

Knowledge Dissemination and Technology Transfer

A Knowledge Dissemination and Technology Transfer Strategy was developed and initiated during the first Cluster to convert applied research into effective, utilized tools that drive industry competitiveness. The BCRC continues to advance the implementation of the Strategy under the Beef Science Cluster II.

Regular communication to industry stakeholders is primarily initiated through the BCRC website, www.beefresearch.ca. Articles that provide overviews of various research topics, summaries of completed and in-progress research projects, advice on adopting technology and innovation into production practices, and commentaries that address misconceptions about modern beef production are continually added to the website. These articles are regularly referenced and redistributed by media (in print, online and radio) and other industry organizations. In addition to written articles, the website features videos, interactive calculators and other decision making tools.

Goals for new resources to be developed in 2016/17 include a high quality and engaging 3-6 minute extension video. The objective of the video will be to increase awareness among cattle producers of the current science-based understanding of the chosen topic, and encourage related best practices on farm. All videos produced by BCRC are made available on www.beefresearch.ca and collaboration with other organizations encourages further promotion and sharing of the videos with industry stakeholders.

A series of webinars will be held during the winter months to relay science-based production advice to seedstock, cow-calf, backgrounding and feedlot producers across the country. Webinars will feature engaging researchers and other industry experts who will aim to offer tangible advice and motivate the audience to continue learning about the topic. Webinars will be held approximately once per month, be free of charge, and recorded to be available on the website afterward.

Six producer-focused extension sessions organized by the BCRC will be held at the Canadian Beef Industry Conference in Calgary on August 10, 2016. The interactive sessions will focus on pain mitigation, antimicrobial resistance, improving forage yields through soil health, internal parasite control, preconditioning and applicable genomic tools. The objective of each extension session is to persuade producers to make a decision about implementing the knowledge presented during the session on their operation. Several corresponding extension materials, such as fact sheets, will be developed for distribution at the sessions, and on the BCRC website for continual access and promotion.

Social media tools, including the BCRC Blog, and Facebook and Twitter accounts, make subscribers and followers aware when new resources are added to the website, and offer seasonal reminders. Communications from the BCRC can also be found through the Canadian Cattlemen's Association's e-newsletter called Action News, a regular research column in Canadian Cattlemen – the beef magazine, staff presentations at industry events, and through provincial cattle organizations' newsletters, email updates and magazines.

While continually increasing website traffic, blog subscriptions and social media engagement, the BCRC has enhanced partnerships with existing industry publications and distribution networks to expand the indirect reach of BCRC communications and extension materials. Focus will be placed in 2016/17 on further expanding the reach of BCRC materials to more producers through direct and indirect means.

In the collaborative spirit of the National Beef Research Strategy and the Science Clusters, the capability for other organizations to develop and share fact sheets through www.beefresearch.ca launched in 2014/15. Research summaries developed by third parties follow BCRC's fact sheet template for consistency, are reviewed and approved by the lead researcher of the project to ensure accuracy, and are moderated by the BCRC before appearing on the website. Focus will be placed in 2016/17 on increasing the number of other funders utilizing the fact sheet system, particularly by funding organizations that do not have the resources to otherwise produce or distribute research summaries. Efforts will also be made to increase awareness among industry stakeholders that a more comprehensive library of pertinent research summaries is available through this channel.

As part of the Knowledge Dissemination and Technology Transfer Strategy, the BCRC is proud to facilitate greater engagement of researchers with industry. The BCRC will continue to sponsor the participation of young research enthusiasts in the Cattlemen's Young Leaders (CYL) program, and continue offering the Beef Researcher Mentorship program which the BCRC launched in 2014/15. The Beef Researcher Mentorship program is ideal for promising new applied researchers with little background in Canadian cattle, forage or beef production. It facilitates 12 months of industry mentorship and networking experiences that are expected to lead to successful research programs aligned with industry priorities and greater researcher involvement in effective technology transfer.

The BCRC will also continue to coordinate the The Canadian Beef Industry Award for Outstanding Research and Innovation which launched in 2015 to recognize researchers or scientists whose work have contributed to advancements in the competitiveness and sustainability of the Canadian beef industry. The award will be presented annually by the BCRC to a nominee that has demonstrated a strong research program aligned with industry priorities, passion and long-term commitment through leadership, teamwork, and mentorship, involvement in ongoing education and training (where applicable), and active engagement with industry stakeholders.

Other Initiatives

Beef Research Capacity

In reviewing the National Beef Research Strategy, the BCRC has identified that one of the areas where there is a significant gap in funding is around the funding of new research capacity in these areas – meat science and forage, breeding, agronomy, and utilization. It is also noted that many provincial and federal government funding agencies are limited in their ability to fund new research positions, while the BCRC has the flexibility to fund this type of initiative. This represents a significant departure for BCRC funding, which has historically focused on funding research projects, not research positions.

Typically new capacity is funded through the creation of a Research Chair positions. Research Chairs can be expensive and require a large amount of work to create, as Research Institutions must be brought onside, and matching industry and government funds must be applied for. The BCRC has agreed that gaps in research capacity are a high priority and consequently is focused on exploring options to establish Research Chairs in a few key areas and invest National check-off funding in partnership with other funders.

National Beef Research Strategy Collaboration & Renewal

The BCRC has accepted a leading role in the implementation of the 2012 National Beef Research Strategy. Consequently a core activity of the BCRC has become the ongoing engagement of other industry and government funding agencies and Research Institutions to identify gaps in research capacity, infrastructure, and programming and ensure priority industry outcomes are being addressed. This activity will continue in 2016/17, with emphasis being placed on addressing current gaps in research capacity that have resulted due to retirements and cutbacks. Priority is also being placed on the development of a longer-term transition planning for existing positions due to the fact that a large number of important beef and forage researchers are expected to retire in the next five years.

Given the significant buy-in seen under the first Strategy, the BCRC and the BVCRT are looking to move forward with renewing it and developing the next five year National Beef Research Strategy for release in early 2017. The renewed strategy will be used to guide the development of the next Beef Cattle Industry Science Cluster. The development of a renewed strategy will involve extensive engagement with industry, researcher, and funders through an online survey, direct consultation, and through a workshop format. The consultative effort is further supported by extensive information gathering and detailed analysis that looks at historical funding through the National Beef Research Inventory, economic analysis in each program area, and measurement of progress on research outcomes in the 2012 National Beef Research Strategy.

National Beef Research Inventory

A core component of encouraging greater collaboration amongst beef research funding agencies and alignment with the national beef research strategy was the development of a national beef research inventory system. The intent of the system is to collect data from major beef research funding agencies. The inventory system tracks two areas. Firstly, participating funders are providing information about the proposals they are receiving and whether they are being funded. This helps track the interests and expertise of researchers, and provides funders with industry's views on the relevance of the research, whether similar work is already ongoing somewhere else, or potential collaborators. The second area tracked is projects that are funded. By comparing the research objectives of each proposal with the target research outcomes in the National Beef Research Strategy, an assessment can be made on how research funding is aligned with the Strategy, which outcomes are being addressed, which research areas are potentially being over-funded, and which outcomes are not being addressed at all.

The BCRC has accepted responsibility for developing and maintaining the national beef research inventory system. In 2014/15 a cost effective internet-based application was developed to make the previous inventory system more accessible to funders and allow them to use the system themselves to customize the output they receive. With a soft launch of the system this year, in 2016/17 we will continue to actively engage funders to encourage increased participation and grow the number of projects and funders represented in the database.

Research Program Implementation

Governance and Board

The BCRC is overseen by an operating committee comprised of industry representatives appointed by provincial cattle organizations that contribute to the BCRC through the National check-off. There are currently 12 committee members which proportionally represent provincial allocation of the National check-off to research. The committee is responsible for the direction of all aspects of the BCRC research program development and implementation, annual business plans and results reports are submitted for approval on an annual basis to Canada Beef, who is responsible for the administration of the National check-off, and to the CCA Board of Directors.

Operational Management

The BCRC is currently overseen by an Executive Director, appointed by the CCA management, who takes direction from the BCRC committee and reports to the CCA Executive. This role includes developing and managing the implementation of annual business and program plans and budgets, organizing and facilitating meetings on behalf of the committee, and providing the committee with advice and input as requested. In addition, the Executive Director acts as a liaison and facilitation link among the BCRC committee, CCA and BCRC staff, technical advisors, and national and provincial interest groups with similar research objectives. The Executive Director encourages coordination of priorities and funding allocations between agencies in alignment with the national beef research strategy.

To support current resources and manage the scope of projects undertaken within the Cluster, the BCRC staff includes a Science Director. Responsibilities include oversight of program development and administration, facilitating call for proposals or directed research requests, coordinating the review of research proposals including the BCRC's internal and peer review process, tracking and monitoring research progress, working with the science advisory panel and the BCRC committee to aid in research program development.

To support the Technology Transfer & Knowledge Dissemination Strategy, the BCRC has a Beef Extension Coordinator. This role includes a comprehensive approach to communications with industry stakeholders and researchers through a dynamic website and other extension tools, and assisting researchers in incorporating effective technology transfer efforts into their research programs.

A Science Advisory Panel supports the research program development process within the Cluster to ensure the delivery of research plans that are directed towards industry's research objectives and achieve the outcomes desired by industry. The panel is comprised of industry, academic and governmental scientific expertise, all considered to be leaders in their field, broad thinkers, and committed to evolving beef research in Canada. The panel also assists with the technology transfer and knowledge dissemination process and identification of commercialization opportunities.

Defining Priority Research Outcomes and Research Programs

The BCRC believes it is important to review and adjust research and technology development priorities to respond to future industry needs. Through the National Beef Research Strategy development process there is a clear commitment to engaging industry stakeholders across all sectors, government, and other

funding agencies in a comprehensive and coordinated priority setting process. This includes the review of historical research funding and results, identification of capacity and infrastructure needs, and the identification of priority research outcomes through workshops and direct engagement of appropriate stakeholders. Plans are well underway to renew the National Beef Research Strategy in 2017.

Upon the determination of research priorities, the research program development process includes direct program development, where researchers with expertise are directly engaged to develop proposals that address areas of priority identified by industry. Open calls for proposals are also solicited to plan cluster programming and where flexible or additional funding allows. More focused call for proposals are also utilized to address specific issues or priorities where gaps are identified.

Research Performance Reporting and Evaluation

In order to demonstrate the value of National check-off investments in research, as well as to encourage government to enhance their own investments in research, industry has taken a leadership role in communicating the value of investments made in beef, cattle and forage research. Due to the limited number of research dollars and a large number of research priorities, industry must also consider the short, medium-and long-term returns to various investment options during its priority and research program planning process.

The BCRC has partnered with Canfax Research Services to develop and monitor a series of research indicators that aid in assessing the economic returns to beef research in Canada, developing BCRC research priorities, and tracking the economic benefit of BCRC funded research over the long term. An inaugural results report was developed and released in February 2014. The report outlines how dollars were invested between 2009 and 2013, and how that research is contributing to advancements in production efficiencies, quality and demand for Canadian beef. In many cases the financial impacts of deliverables to the industry were calculated; some impacts may not be fully apparent for several years. The next comprehensive research results report will be released in 2018 upon the completion of the second Beef Cattle Industry Science Cluster.

The BCRC has also committed to completing a series of Priority Area Reviews. These take an in depth look at the different areas of research within each priority area and assesses progress, availability of research and technology transfer resources domestically and internationally, identifies gaps and emerging issues that need to be addressed moving forward. The inclusion of cost-benefit analysis also helps industry determine the most appropriate areas for future investment. To date reviews have been completed for (1) Beef Quality & Food Safety; (2) Forage & Grassland Productivity; and (3) Animal Health & Welfare.

These reports will help to inform the next round of priority setting and National Beef Research Strategy. In addition, a historical review of research indicators is being completed along with an evaluation of the first National Beef Cattle Research Strategy.

Budget

The BCRC has been challenged to implement a comprehensive research strategy which addresses multiple industry priorities while remaining fiscally prudent. The BCRC is committed to funding leading-edge research to position the Canadian beef cattle industry as a global leader in beef quality, animal health and welfare, food safety and environmental stewardship. Continued progress requires long-term research investments to ensure that our industry can respond and adapt to new issues and opportunities that arise.

Industry and government funding play a major role in ensuring that both applied and long-term, high-risk discovery research continues. The BCRC has made significant strides through the Beef Cattle Industry Science Cluster to develop collaborative research initiatives between industry and government that align applied research priorities and funding to ensure that key research outcomes are achieved. Significant effort is also focused on enhancing technology transfer and knowledge dissemination to ensure more immediate uptake of research results by industry.

Moving forward, continued effort and funding will be required by industry to ensure the development of comprehensive research programs aligned with industry's needs. Efforts will also need to be placed on demonstrating the value of long-term predictable research funding commitments from both government and industry to allow for more meaningful research outcomes and ensure continued commitment.

The following budget includes the operating expenses and revenues for BCRC's fiscal year July 1, 2016 to June 30, 2017. The revenue for 2016/17 is projected at \$3,085,232 and includes funding received from the National check-off, as well as from industry and government partners. These partners, including the Alberta Livestock and Meat Agency (ALMA), Saskatchewan Agricultural Development Fund (SADF) and provincial beef associations, are major partners in funding research. The budgeted revenue reported from ALMA, SADF, and other funders reflects funding provided for research programs, managed by BCRC. The intent is that this revenue offsets project expenses at a \$0 balance.

The 2016/17 expenses include operating expenses and direct expenses for research projects. Expenses for 2016/17 are projected at \$3,584,085. The projected deficit of (\$498,853) will be offset by reserve funds.

BCRC Reserve

The BCRC maintains a restricted reserve of \$1.5 million to cover off management costs and contracted research commitments in the case BCRC ceased operations. The majority of the current reserve in excess of the restricted reserve is committed to meeting future year project commitments that are contracted and will be drawn down over the next three years.

Beef Cattle Research Council 2016-17 Budget

Net Assets, beginning of year(July 2015)		3,630,323
Projected excess (deficiency) of revenue over expenditure		<u>(774,247)</u>
Net Assets, June 30, 2016		2,856,076
Projected 2016 - 2017 Revenue		
National Check-Off		1,200,000
ABP Beef Science Cluster		75,000
Prov. Science Cluster Grants		50,000
Interest Earned		27,000
Projects managed by BCRC		
AAFC ARI - MISC.03.15 Remote Sensing	221,839	
AAFC - VBP Plus Growing Forward 2	140,408	
AAFC - Enhanced VBP Plus	1,173,496	
ALMA - MISC.01.16- Enhancing Traceability PhII	197,489	
Subtotal		1,733,232
Total Revenue		3,085,232
Projected 2016 - 2017 Expenses		
BCRC Operations		329,559
Projects funded (non-Cluster)		
CgFarad	7,500	
Misc. 03.12 Elanco Barley Straw	20,000	
Misc.04.13 Offal Quality	2,000	
National Research Inventory	840	
Research Program Development	375,000	
EU CETA Scientific Review of Microbial Interventio	25,000	
Subtotal		430,340
Projects managed by BCRC		
AAFC ARI - MISC.03.15 Remote Sensing	221,839	
AAFC - VBP Plus Growing Forward 2	140,408	
AAFC - Enhanced VBP Plus	1,173,496	
ALMA - MISC.01.16- Enhancing Traceability PhII	197,489	
Subtotal		1,733,232
Verified Beef Production Program - operations		123,584
Cluster Projects funded - Industry contribution		967,370
Total Expenses		3,584,085
Excess (deficiency) of revenue over expenditure		(498,853)
Projected net assets , June 30, 2017		2,357,224