
Discussion and Analysis of Results

Financial Results of Operations

Revenue

Ministry revenue was \$823 million, \$5 million lower than 2014-2015 and \$106 million lower than budget.

Compared to 2014-15 Actual

- Lower revenues from the previous year are due to decreases in hail and livestock insurance producer premiums, decrease in federal government grant for AgriStability program, and decrease in timber royalties. These decreases were offset by an increase in federal government transfers from the Softwood Lumber Agreement and federal and producer share of AgrilInsurance premiums.

Compared to Budget 2015

- Lower revenues compared to budget were a result of reduced federal grant for AgriStability due to lower prior-year estimates. The timber revenues were lower compared to budget due to mountain pine beetle and fire salvage for softwood lumber affecting the timber royalties. Producer premiums for straight hail programming is lower than anticipated due to decreased participation as a result of dry conditions.

Expense

Ministry expense was over \$1.6 billion, \$291 million higher than 2014-2015 and \$285 million lower than budget.

Compared to 2014-15 Actual

- Environmental Protection and Enhancement Fund spending for fighting wildfires and reforestation increased by over \$250 million compared to previous year.
- Indemnities payments to producers for AgrilInsurance increased \$118 million due to dry conditions compared to last year.
- Agriculture Income Support payments decreased by \$45 million.
- Growing Forward 2 strategic initiatives funding increased by \$5 million.

Compared to Budget 2015

- The adverse dry conditions at the beginning of the crop year anticipated increased spending for indemnities. Conditions improved late in the summer due to rain and delayed frost leading to better than average yields than was budgeted. This resulted in over \$200 million in decreased indemnities for insurance programs.
- Agriculture Income Support payments decreased over \$60 million compared to budget.

Picture of Agriculture and Forestry in 2015

It was another interesting year for the global market in 2015. As Albertans know, the energy sector has been hit hard by low oil prices. In fact, Alberta's food and beverage manufacturing sales in 2015 were the province's largest manufacturing industry, narrowly surpassing petroleum and coal products.

Alberta's agriculture and food sector performed exceptionally in 2015, as evidenced by the records achieved for several key statistical indicators relating to farm income, international exports, and food and beverage manufacturing sales. Total food and beverage manufacturing sales for the province increased for the sixth consecutive year to record sales of \$14.6 billion, which was seven per cent higher than 2014. Alberta's total agri-food exports were up for a second consecutive year in 2015, ending five per cent higher than the previous year. At \$10.2 billion, it is the first time agri-food exports have exceeded \$10 billion. Processed products increased 13 per cent to \$4.8 billion, while exports of primary commodities declined a marginal two per cent to \$5.4 billion.

This success occurred despite some challenges in the province, such as dry conditions early in the crop growing season, getting the crop off, and lower hog prices. Contributing to the agriculture and food industry record "highs" in 2015 were a number of factors, including strong prices for cattle and beef in the first half of the year, the weaker Canadian dollar, and global supply and demand. In recent years, these factors along with relatively strong crop prices have supported growth in Alberta's agriculture and food sector.

Similarly, Alberta's forestry sector performed well in the past year, aided by the sharp depreciation of the Canadian dollar. In 2015, Alberta softwood lumber mills experienced increasing lumber prices while panel producers enjoyed a marked recovery in Canadian dollar pricing, which is in stark contrast to U.S. producers. Exports for wood, pulp, and newsprint were over \$2.8 billion in 2015, a 12 per cent increase from the previous year. However, global supply and demand for forest products presented a challenge. For example, increasing U.S. domestic production that coincided with significant declines in U.S. softwood lumber exports to Asia resulted in the U.S. importing less Alberta lumber.

While stronger commodity prices and favourable currency exchange rates contribute to our success, the combined efforts of hard-working Albertans with a passion for agriculture and forestry, a government that supports these industries, and the programs and services delivered by the Ministry of Agriculture and Forestry are essential.

This annual report details some of the most significant actions we took to support this success. Our consolidated accomplishments are presented from management's perspective according to our desired outcomes and priority initiatives, as listed in the 2015-18 ministry business plan.

If you enjoyed this year in review, further statistics are available in Appendix A.



Desired Outcome One: Alberta's agriculture and forest industries are positioned for increased growth

In working toward achieving this desired outcome, the ministry identified the following priority initiatives in its 2015-18 ministry business plan.

Priority Initiative 1.1 – Represent Alberta's agriculture and forestry interests in trade agreements with priority markets and the opportunities that emerge as a result.

Agriculture and Forestry sought to ensure both the Canada-European Union (EU) Comprehensive Economic and Trade Agreement (CETA) and Trans-Pacific Partnership (TPP) would result in viable export opportunities for Alberta's agriculture and forest products by providing input regarding Alberta's agricultural priorities to federal negotiators. The agreements represent substantial new opportunities in the EU and Asia-Pacific regions, which will help the agriculture and forest industries grow.

In 2015-16, legal review of CETA was completed, which paves the way for ratification and expected implementation in 2017. The CETA will lower substantial barriers to key agri-food exports such as beef, pork, canola, canola oil, pet food, and wheat. Once CETA is ratified, the remaining challenge will be ensuring regulations and administrative practices in the EU do not block the access provided in CETA.

Completion of TPP negotiations in October 2015 resulted in an agreement that will give Canada improved access to Japan, a key export market, and access to new markets in Vietnam and Malaysia. The TPP also has the potential to strengthen economic relations with the United States and Mexico.

The TPP agreement has moved to the ratification stage in all 12 member countries. However, it is unclear if the United States will move to ratify it; without U.S. ratification, the TPP agreement cannot move forward. Agriculture and Forestry will continue to inform the agriculture industry, state-level agriculture officials, and industry groups in the United States of TPP's benefits.

Agriculture and Forestry has also been involved in a long-standing trade agreement that has seen its challenges. After years of dispute at the World Trade Organization, the 2006 Canada-U.S. softwood lumber agreement revoked U.S. trade barriers against Canadian lumber. As a result, more than \$4.5 billion in tariffs were returned to Canadian exporters. However, the agreement expired on October 12, 2015. A one-year grace period prevents the United States from launching trade action against Canada. On March 12, 2016, a 100-day negotiation window opened to allow parties to explore all options for resolving the trade dispute. Provincial and federal officials continue to develop a softwood lumber strategy for Canada.

Priority Initiative 1.2 – Reduce interprovincial trade and infrastructure barriers and ensure Alberta's agriculture and forest products can reach markets more effectively and efficiently.

Although most products and services move between provinces with ease, some remaining barriers prevent certain local products from competing with imports. Examples of remaining barriers include:

- provincial restrictions on wines and spirits;
- differing provincial requirements on the certification of professionals; and
- federal regulations that delay or prevent the movement of bulk vegetables.

To address these barriers, the provinces, territories, and federal government are negotiating a renewed Agreement on Internal Trade. The Ministry of Economic Development and Trade leads these negotiations; Agriculture and Forestry provides input on negotiating objectives for agriculture, food, and forest products.

In 2015-16, negotiators made significant progress toward a final agreement. Remaining work for agricultural products is focused on ensuring the continuing operation of marketing systems for dairy, poultry, and other products under provincially regulated boards and commissions. Negotiations for a renewed Agreement on Internal Trade are expected to conclude in 2016.

Priority Initiative 1.3 – Engage with the federal government, the United States, and international trade organizations in repealing mandatory Country of Origin Labelling (COOL).

Mandatory Country of Origin Labelling (COOL) is a U.S. law that affected Canadian cattle and hogs in 2008, resulting in significant segregation and tracking costs. Canada and Mexico won a decision from the World Trade Organization authorizing Canada to impose up to \$1 billion in retaliatory import taxes on U.S. goods if COOL was not changed to comply with the World Trade Organization's rules. Agriculture and Forestry advocated against COOL since its implementation and provided data and analysis to support the development of Canada's arguments at the World Trade Organization.

In December 2015, the U.S. Congress repealed COOL for beef and pork, ending this discriminatory measure that cost Canadian cattle and hog producers an estimated \$1 billion per year. The support and advocacy provided by our ministry helped enable this tremendous achievement.

However, COOL remains for sheep and lamb. While the volume of trade in sheep and lamb is smaller than beef and pork, COOL is a significant barrier for this industry. Agriculture and Forestry continues to encourage the federal government to work with the United States to amend or repeal COOL for sheep and lamb without resorting to another dispute at the World Trade Organization.

Priority Initiative 1.4 – Increase representation in priority markets, strengthening the Canada and Alberta profile as a preferred global supplier for agriculture and forest products.

A broader base of export destinations allows industry to benefit from opportunities in emerging markets while maintaining established markets, which is important to the growth and diversification of the agriculture and forestry sectors. This priority initiative focuses on building Alberta's profile as a partner

and reliable supplier of premium agriculture, food, and forest products to increase trade and exports. Results in 2015-16 include the introduction of 26 Alberta exporters to China, Japan, and South Korea and support of three senior-level market access and advocacy missions.

In our progress toward achieving this desired outcome, we use the following performance measure.

Export market diversification

YEAR ENDING AT DECEMBER 31

Performance Measure 1.a	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Target 2015
Alberta's agri-food exports by market (in \$ millions)						
United States (U.S.)	2,551	2,967	3,080	3,931	3,998	3,144
China	937	1,646	1,511	1,324	1,588	1,481
India	58	58	39	18	31	45
Canada-European Union Comprehensive Economic and Trade Agreement (CETA) member countries	370	280	248	307	382	329
Trans-Pacific Partnership (TPP) member countries (excluding U.S.)	2,023	2,232	2,062	2,023	2,022	2,292
Rest of the World	2,122	2,026	1,807	2,110	2,161	2,169

Source: Statistics Canada; Agriculture and Forestry (results current as of May 11, 2016).

Note: The "Year" headings were mislabelled in the 2015-18 Agriculture and Forestry business plan and have been corrected—i.e., "2015-16" was labelled as "2016." Target years always stay the same, corresponding to the business plan's time frame. The headings were labelled correctly in the Government of Alberta Performance Plan.

This measure represents the monetary value of Alberta's agriculture and food products leaving the province through customs for a foreign destination market. It is an indicator of our success in facilitating industry growth through export market diversification for Alberta's agriculture and food products.

Diversification of export markets contributes to industry growth and to the provincial economy. A broader base of export market destinations allows the industry to benefit from accessing emerging markets with high growth potential while maintaining its traditional U.S. market. By diversifying our agriculture and food export markets, we reduce demand uncertainties for agri-food products and raise the expected benefits of investing in agri-food processing.

In 2015, Alberta agri-food exports reached another record at \$10.2 billion, an increase of five per cent over the 2014 record of \$9.7 billion. The low Canadian dollar and continued high livestock prices, particularly for meats, contributed to the increase.

Gains were reported mainly in exports of processed or manufactured products such as meats, crude canola oil, processed potatoes, animal feeds, and malt and processed cereals. Beef exports grew 18.7 per cent to \$1.7 billion due to strong prices and quantity being up 2.1 per cent. While exports of processed products increased, exports of primary commodities declined.

The growth in agri-food exports varies by export market destination. Agri-food exports to the U.S., China, India, CETA member countries, and the "Rest of the World" showed substantial increases in total value of exports. In contrast, exports to the TPP member countries (excluding the United States) declined slightly by 0.1 per cent due to lower exports of primary commodities, mainly crops such as canola seed, barley, and hay and fodder.

With the exception of India and the "Rest of the World," increases in exports resulted mainly from larger shipments of processed products (values and quantities).

The United States remains the largest export market for Alberta, particularly for provincial processed products. China was the second-largest market in 2015. Contrary to the previous year, exports of processed products to China grew significantly with higher exports of beef, crude, and refined canola oil. For India, there was a strong increase in exports (value and quantity) of primary commodities, driven by dry peas. Exports to CETA member countries showed increases in both primary and processed products in 2015.

Going forward, “TPP member countries” have been replaced with Japan and Mexico. Due to the need to demonstrate tangible results in the short to medium term, we have been providing trade development activities at the country-specific level. This revised focus allows us to concentrate efforts on the two countries that account for over 85 per cent of Alberta’s agri-food exports to TPP countries (excluding the United States). The remaining TPP member countries are still being monitored to identify export opportunities.

In our progress toward achieving this desired outcome, we use the following performance measure.

Composition of export products

YEAR ENDING AT DECEMBER 31

Performance Measure 1.b	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Target 2015
Alberta’s agri-food exports by sector (in \$ millions)						
Primary commodities	4,520	5,529	5,103	5,475	5,379	5,483
Processed or manufactured products	3,541	3,681	3,645	4,238	4,803	3,947

Source: Statistics Canada; Agriculture and Forestry (results current as of May 11, 2016).

Note: The “Year” headings were mislabelled in the 2015-18 Agriculture and Forestry business plan and have been corrected — i.e., “2015-16” was labelled as “2016.” Target years always stay the same, corresponding to the business plan’s time frame. The headings were labelled correctly in the Government of Alberta Performance Plan.

This measure tracks the type of Alberta’s agri-food exports and provides an indication of whether the industry is shifting from primary commodities to processed products. Increasing the export share of processed products relative to primary commodities allows the industry to generate and retain a larger portion of revenues and economic benefits from global agri-food trade.

Primary commodities are products that are in a raw or unprocessed state, such as crops or livestock. Processed or manufactured products involve refining primary commodities to increase value, such as turning raw canola into higher valued canola oil. The processing sector also fortifies a diverse range of secondary industries across the food supply chain, including transportation and logistics, refrigerated storage facilities, beverage manufacturing, wholesale and retail distributors, and the food service industry.

While agri-food revenues are not wholly under our control, growth in revenue does act as an indicator of our success in trade development activities. To enhance

industry performance, we work collaboratively with companies and producers to develop new agri-food products for domestic and international markets, promote Alberta agri-businesses as attractive investment opportunities to foreign and private investors, support export-ready agri-food businesses to access international markets, and stimulate demand through the promotion of our high-quality agri-food products.

In 2015, Alberta’s total agri-food exports set another record at \$10.2 billion, of which processed agricultural products accounted for 47 per cent of the total. Exports of processed products increased in 2015, while primary commodity exports declined. The increase in processed products surpasses the decrease in primary commodity exports, causing the overall increase in total agri-food exports.

Revenue from exports of primary commodities, at \$5.4 billion, declined two per cent from 2014, primarily due to lower values or quantities of canola seed, hay and fodder, dry peas, and live cattle. Despite the decline, primary commodities accounted for over one-half of Alberta total agri-food exports.

Revenue from exports of processed or manufactured products, worth \$4.8 billion, grew 13 per cent over the previous calendar year, due to higher values and quantities of meats, crude canola oil, processed potatoes, animal feed, and malt. As a result of high

meat prices, beef exports grew about 19 per cent in value and just over two per cent in quantity.

Overall, in 2015, the export trend continued to shift toward processed or manufactured products and the gap between primary and manufactured exports has narrowed.

Priority Initiative 1.5 – Identify and pursue new opportunities for growth in domestic markets.

The ministry provides information and coaching to:

- help processors determine targets for new agricultural products and services;
- determine product placement, packaging, and consumer awareness and market plans to help new products stay in the market beyond a year; and
- prepare for the challenges inherent in entering new markets, reducing industry's risk and enhancing its credibility with buyers.

In 2015-16, Agriculture and Forestry assisted agri-processing clients to pursue trade development opportunities in British Columbia and Manitoba and enter major national food retail outlets (e.g., Safeway and Loblaw Companies). These retailers provide unique marketing opportunities for sourcing agri-food products.

An ongoing challenge for the Alberta agri-food industry is insufficient opportunities for exposure to consumer food trends in international marketplaces such as the United Kingdom and the rest of Europe. This lack of exposure to emerging trends impedes our industry's ability to compete. Agriculture and Forestry continues to address this challenge through research tours that take Alberta agri-food producers to international trade shows or educational sessions to gain product inspiration and innovation, giving domestic companies the opportunity to develop products before an international competitor.

Another significant challenge is the lack of food processing facilities in Alberta that can accommodate gluten-free, peanut-free, and vegan production. This gap means Alberta production companies are limited in their growth while U.S. competition fills the void.

Attracting Investment to Alberta

In 2015-16, three new companies and investments were attracted to Alberta in the sub-sectors of pet food manufacturing, ham and deli meat manufacturing, and bio-plastics. Two existing investments were expanded in the areas of milk

fractionation and oat processing. Agriculture and Forestry facilitated these five investments, which have an estimated value of \$42 million and a potential to create over 90 new jobs when fully operational.

Ministry Information and Support

Agriculture and Forestry maintains data and information encompassing Alberta's agri-food industry. Data intelligence and related analysis allows the ministry to make evidence-based decisions when developing programs and policies. Industry, producers, and agri-businesses use a variety of information, including trends, sales volume, exports, and operational costs, to aid their management decisions. Information is shared through a number of client-focused products including the Agriculture Statistics Yearbook, AgriProfit\$, CropChoice\$, Agricultural Marketing Guide, Alberta Food Consumer View, Weekly Crop Review, and Livestock Market Review. The ministry's robust data complements information provided by other jurisdictions, allowing for a complete national picture and demonstrating the value of Alberta's agri-food industry relative to other provinces.

Desired Outcome Two: Alberta has more effective assurance systems that inspire confidence

In working toward achieving this desired outcome, the ministry identified the following priority initiatives in its 2015-18 ministry business plan.

Priority Initiative 2.1 – Implement all Flat Top Complex Wildfire recommendations.

In 2013, the government committed to implement all 21 of the Flat Top Complex Wildfire Review Committee recommendations in 20 years. The recommendations respond to current and emerging challenges facing wildfire management, including:

- extreme weather conditions;
- longer fire seasons;
- a growing population and increased development in forested areas; and
- the need for increased wildfire mitigation around communities, increased preparedness and capacity for wildfire suppression, enhanced communications, science and technology, and unclear roles and responsibilities.

In 2015-16, approximately \$26 million was spent for wildfire management improvements and enhancements that respond to the Flat Top Complex recommendations. Many of the recommendations require ongoing programming and funding, such as improved wildfire prevention through programs like FireSmart and increased preparedness and capacity through increased numbers of firefighters. A consultant is currently reviewing the implementation status with a final report expected in July 2016.

In our progress toward achieving this desired outcome, we use the following performance measure.

Containment of wildfires

YEAR ENDING AT DECEMBER 31

Performance Measure 2.a	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Target 2015
Percentage of wildfires contained before 10 a.m. the day following assessment	96.1%	97.9%	98.3%	99.2%	92.7%	96.8%

Source: Agriculture and Forestry.

Note: Target is calculated as a rolling average of the last five years' actual results, including the current year (2015).

This performance measure reports how successful the ministry is in containing wildfires by 10 a.m. the day following assessment. Wildfires traditionally start in the mid-afternoon or early evening and can build in size and fire behaviour, making control more difficult. During the evening and overnight periods, temperature tends to decrease and relative humidity tends to increase, giving firefighters an opportunity to contain the wildfire by 10 a.m. the day following

assessment. Prompt containment reduces the rapid spread, size, and intensity of wildfires and its impacts, protecting Albertans and minimizing losses and costs.

The 2015 fire season started on April 1, 2015, and ended on October 31, 2015. Of the 214 days in the fire season, 115 were above the average severity rating. This contributed to an increase in number of wildfires and area burned.

For 2015, 92.7 per cent of wildfires were contained before 10 a.m. the day following assessment, which is 4.1 per cent lower than the forecasted target of 96.8 per cent. Alberta experienced extraordinary wildfire conditions and activity in 2015 which impacted our ability to achieve the target. This measure is subject to variance due to the following external factors that are outside the control of the ministry:

- wildfire activity (number, size, and intensity);
- weather events (sustained high temperatures, strong winds, lightning, and low relative humidity);
- drought conditions; and
- forest fuel conditions.

In the 2015 wildfire season, the ministry responded to 1,786 wildfires that burned approximately 500,000 hectares, surpassing the five-year average of 1,422 wildfires and approximately 263,243 hectares burned. Sixty-four large wildfires, defined as greater than 200 hectares, were detected, which is significantly

higher than the five-year average of 19. Only once in the last 25 years has the province experienced a similar number of large wildfires.

To support the prompt containment of wildfires, the ministry used its mutual aid agreement to import firefighting resources from across Canada (Canadian Interagency Forest Fire Centre, Parks Canada, British Columbia, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward Island, and Quebec) and from other countries (Australia, Mexico, New Zealand, South Africa, and United States) to assist with wildfire suppression activities. In total, 1,128 firefighting resources were imported, far surpassing the five-year average of 485. These additional resources played a significant part in achieving the reported result.

The ministry continues to review its strategies and policies to improve wildfire prevention, preparedness, and response capacity.

Fort McMurray Wildfire

On May 3, 2016, an extraordinary wildfire event threatened Fort McMurray, resulting in the mandatory evacuation of over 80,000 residents. Due to the admirable efforts of first responders, 90 per cent of the 25,000 structures in the area were saved including the hospital, all municipal buildings, and every functioning school. Although this does not lessen the devastation to the hardest hit neighborhoods, the vast majority of the city was saved. Recovery efforts are underway. Full reporting of the wildfire will occur in the ministry's 2016-17 annual report.

Priority Initiative 2.2 – *Continue efforts to control and manage mountain pine beetle impacts.*

The ministry focuses on reducing the spread and population of mountain pine beetle to control and manage its impacts on pine, including lost sale volumes of pine. Controlling infestations has multiple additional benefits, including supporting recovery of at-risk species such as caribou and tree species like whitebark and limber pine; slowing the expansion of mountain pine beetle; and protecting critical watersheds on the eastern slopes of the Rocky Mountains.

Significant progress has been made with controlling and managing mountain pine beetle in Alberta.

In 2015-16, the ministry conducted aggressive treatment in priority areas throughout the province such as caribou ranges and completed single treatment of 89,063 trees. The number of trees treated is especially significant because it is an approximate 31 per cent decrease compared to last year, demonstrating that direct control efforts lead to reduction of the beetle population.

Agriculture and Forestry also participated in the federal National Forest Pest Strategy to develop a national strategic plan to slow the spread of mountain pine beetle.

Priority Initiative 2.3 – Improve the coordination and effectiveness of food safety and traceability systems.

This priority initiative focuses on improving Alberta's ability to rapidly respond to and limit the impact of a food safety or animal health crisis. Robust and collaborative systems improve investigation and response while reducing the impact of food and animal health crises on public health.

A traceability system is a critical component of a national animal health and food safety system. Alberta has livestock traceability requirements for several species under the *Animal Health Act* and programs to support a traceability system. Knowing when and where diseased and at-risk animals have been reduces response times during emergencies and ongoing animal disease control programs. The result for Albertans is a system that minimizes the economic, environmental, and social impacts from such events.

However, the system faces some challenges, including an incomplete database of farm locations in the premises identification program and a lack of comprehensive movement reporting for all livestock species. The premises identification program is critical in helping the ministry respond to disease threats such as anthrax. While some sectors have high uptake, many animal owners have not applied for a premises identification account or registered their land.

The ministry has addressed both these challenges by collaborating with livestock industry participants and providing cost-shared assistance to encourage adoption of new, innovative traceability technologies. For example, the ministry is supporting Alberta Pork with the development and implementation of an electronic movement reporting system. The ministry also plays a key role on federal-provincial-territorial working groups, which are proposing new federal laws requiring more comprehensive movement reporting nationwide.

In 2015-16, compliance activities resulted in 30 per cent more land locations registered in the premises identification database, bringing the total number of registered premises to over 32,000; these compliance activities will continue. To enhance movement tracking and reporting, approximately \$450,000 was provided to 34 feedlots and 47 cow-calf and sheep operations to acquire radio-frequency identification technology.

Agriculture and Forestry's role with regards to the complex issue of food safety is to obtain consistency and compliance through inspection and enforcement activities. The ministry also enhances integrated food safety process controls by:

- maintaining a food safety surveillance system to validate the safety of animal slaughter practices at Alberta-licensed facilities;
- facilitating adoption of internationally accepted meat processing safety systems and standards; and
- advancing food safety culture through training and programs that enhance food safety awareness and emergency response.

The industry is diverse, with different sized operations facing unique challenges; the breadth of stakeholders makes communicating with everyone a challenge. Broader engagement is necessary to communicate the programs and services provided. In support of food safety, grants over \$3 million went to 510 producer, 59 processor, and 12 delivery agents. Agriculture and Forestry finalized modernization of the poultry inspection model in 2015-16. Modernization more effectively addresses today's risks through surveillance programs and pathogen reduction activities. Inspectors can shift their responsibilities to areas of higher risk such as increased monitoring of good manufacturing practices, food safety compliance, pathogens, and animal welfare. These are the first changes to the model since 1972. The ministry is rolling out a robust communication strategy to obtain buy-in from industry and inspectors.



In our progress toward achieving this desired outcome, we use the following performance measure.

Compliance with slaughter requirements

YEAR ENDING AT DECEMBER 31

Performance Measure 2.b	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Target 2015
Percentage of active provincial licensed abattoirs that meet provincial food safety slaughter requirements	n/a	n/a	n/a	93%	84%	93%

Source: Agriculture and Forestry.

Note: Results prior to 2014 are not comparable because the performance measure has been changed to focus on the department's role in animal slaughter regulatory oversight.

This measure tracks the percentage of active Alberta-licensed abattoir facilities that meet or exceed provincial safe animal slaughter requirements under the *Meat Inspection Act* and Meat Inspection Regulation.

The scope of provincial animal slaughter requirements encompasses food safety risk factors associated with all aspects of the animal slaughter business, from slaughter equipment to protection from contamination and personnel hygiene practices, to ventilation and lighting.

Each facility is required to demonstrate continued knowledge of and strict adherence to all animal slaughter practices at slaughter day inspections. Animal slaughter inspection staff track and respond to areas of non-compliance by issuing a corrective action report when inspections reveal that slaughter practices or operating procedures create a potential food safety risk.

Fifty-three slaughter inspectors inspected 112 Alberta-licensed abattoirs. These abattoirs received scheduled slaughter inspections each slaughter day throughout the calendar year as part of the Slaughter Inspection Program.

Approximately 84 per cent (94 out of 112 abattoirs) of the inspected Alberta-licensed abattoirs met or exceeded provincial animal slaughter requirements at all slaughter inspections, with the remaining 18 not meeting slaughter requirements during at least one of the inspections. Risk-based assessments were conducted on all meat products associated with these 18 abattoirs to confirm all meat products were safe for further processing and human consumption. Follow-up inspections of the abattoirs confirmed that all 18 abattoirs addressed all areas of non-compliance that were noted during their respective inspections. These 18 abattoirs are being monitored to ensure continued compliance and to reduce the risk of lapsing into non-compliance in future years. Food safety staff participate in continuous training to maintain and improve the quality of educational information and regulatory oversight that we provide to Alberta-licensed abattoirs and provide consumer protection.

Future targets have been increased to 100 per cent to reflect the ministry's commitment that all abattoirs meet provincial safe food slaughter requirements at all times and at each scheduled inspection. A combination of education and regulatory activities, including science-based food safety laws, rules, and standards, are being utilized to achieve a high rate of compliance.

Priority Initiative 2.4 – *Develop policy frameworks and promote best practices and technology adoption for enhanced animal protection and welfare.*

A sound animal welfare system ensures animals are protected from distress and there is continuous improvement in the welfare of farmed animals.

The *Animal Protection Act* is the key legislation for this sector. However, the governance system does not delineate clear roles and responsibilities for the numerous organizations involved. To address this, the ministry completed an Animal Welfare Framework in 2015-16 for use in broader discussions. Moving forward, consultations on the framework will lead to the creation of an animal welfare strategy. A completed animal welfare strategy will identify potential

amendments to policy that could improve the province's system to meet the needs of all participants and animals.

Growing Forward 2 programming supports enhanced animal welfare and increased knowledge of and improvements in animal care best practices by providing cost-shared support to enable industry's adoption of new technologies and improvements to existing equipment. Future Growing Forward animal welfare programming will build upon this success and be aligned with the animal welfare strategy to encourage industry to achieve the strategy's objectives.

Priority Initiative 2.5 – *Create and promote systems that drive practice change, improve compliance, and better protect against the spread of diseases and pests.*

Agriculture and Forestry collects and analyzes information on the health of Alberta's livestock. Livestock diseases often spread rapidly. Unexpected or uncontrolled diseases can have a significant economic cost and a devastating impact on animal and human health. Early detection allows for a quicker response, which leads to faster resolution and recovery; for example, in 2015-16 the ministry's rapid detection of and response to *Salmonella enteritidis* in a hatchery that was providing chicks to small flock owners greatly reduced the risk to public health. Strong systems also assure market access for Alberta's products; for example, surveillance in the swine sector allowed Alberta to prove to the United States that the province is free of porcine epidemic diarrhea.

Bovine Spongiform Encephalopathy

Surveillance of bovine spongiform encephalopathy (BSE) continued in support of the national program to demonstrate Canada's control measures are effective. A total of 5,235 samples were submitted in 2015-16. On the one hand, the number of animals tested for BSE continues to fall short of the provincial target due to a limited population of eligible animals, higher prices for cull cows

(lack of financial incentive), and fading vigilance by industry and producers. To increase testing, the ministry engages in educational activities to improve awareness of BSE surveillance among producers and veterinarians. On the other hand, the ministry and stakeholders have achieved much on this issue — the last positive case was detected in February 2015.

Agriculture and Forestry also provides pest diagnostic services and conducts surveillance of crop pests, including insects, diseases, and weeds. These activities provide information about the incidence and geographic distribution of regulated pests, which is vital for effective risk management and ensuring profitability. Left unchecked, diseases and pests can spread, causing serious economic damage and rendering some crops uneconomical to grow.

Fusarium graminearum

The disease *Fusarium graminearum* (Fg) has devastated cereal crops in other jurisdictions, costing billions of dollars. Estimated annual losses related to a potential spread of Fg in Alberta could range from \$29 million to \$64 million per

year (not including market losses due to quality). Alberta's approach to minimize Fg includes surveillance of the disease, research into fungicide control options, and implementation and delivery of a comprehensive education plan to industry partners. Improved awareness of Fg, its symptoms, and proper management will limit the establishment and spread of the disease and ensure cereal crops remain profitable and environmentally friendly for Alberta. So far, this approach has succeeded in keeping Fg at bay. An ongoing challenge is for the ministry to deliver protection against Fg given the size of the province and progress of other diseases. To partially address this challenge, the ministry builds strong working relationships with agricultural fieldmen and staff throughout rural and urban municipalities.

Weeds

Weeds are the primary agricultural pest and main reason for pesticide use in Alberta. The ministry provides objective information about the impact of weeds and the use of herbicides on crops. However, the lack of required reporting under the *Weed Control Act* and inconsistent implementation reduces the ministry's ability to respond rapidly to new threats and hampers future legislation and policy decisions. In response to this ongoing challenge, the ministry supports regional weed schools to train and refresh field staff and provides extension, diagnostic services, and management planning to support the *Weed Control Act* and *Agricultural Pests Act*.

Agriculture and Forestry facilitates the inclusion of irrigation infrastructure in the provincial Aquatic Invasive Species program and supports irrigation districts in the development of district-specific preparedness and management protocols.

Mussels

Invasive aquatic species such as zebra and quagga mussels pose a serious threat to irrigation infrastructure. The mussels would reduce water conveyance efficiency and require millions of dollars annually to control, in perpetuity. All irrigation water users would be affected, including the drinking water supply of 30 communities, rural water co-ops, primary producers such as confined feeding operations and irrigators, and industrial water users. In a short time, Alberta's responsiveness and activity on this issue went from negligible to a nation-leading program of monitoring and prevention. For 2015-16, monitoring activities detected no invasive mussels.

Rat Control Program

Thanks to Agriculture and Forestry's rat control program, Albertans have enjoyed rat-free living since 1950. Norway rats are extremely destructive to property, stored and in-field crops, and human health. Rats arrive in Alberta from commercial and public traffic between the province and uncontrolled areas. The 310-RATS number allows the public to quickly report rat sightings. Pest control officers in the rat control zone respond to and manage rat calls and infestations. In 2015-16, approximately \$250,000 was spent on six contracts with municipalities in the rat control zone and \$54,400 was spent on bait. Thirty confirmed rat reports led to eradication, including removal of one infestation in Bon Accord. Maintaining Alberta's rat-free status reduces the risk of diseases carried by rats, reduces property damage caused by rats, and instills public confidence in the rat control program.

Desired Outcome Three: Alberta's agriculture and forest industries are more environmentally responsible and sustainable

In working toward achieving this desired outcome, the ministry identified the following priority initiatives in its 2015-18 ministry business plan.

Priority Initiative 3.1 – Work with processors and producers to increase the adoption of environmentally sustainable agriculture practices and energy efficient technologies.

Albertans are increasingly aware of the need for the effective management of our soil, water, air, and biodiversity. Agriculture and Forestry works with industry and government partners to implement innovative environmentally responsive solutions, improve environmental stewardship, and communicate its responsible stewardship and management of Alberta's natural resources and environment.

The ministry focuses on agriculture and forest industries' proactive adoption of new technologies and practices, which can position an industry to grow, improve its competitiveness, and meet consumer expectations. Results from the 2016 Environmentally Sustainable Agriculture Tracking Survey indicate producers who:

- access ministry programs report adoption of environmental practices at a rate of 60 per cent, versus an adoption rate of 46 per cent for producers who do not access ministry programs;
- consult ministry staff or program-delivery partners report an adoption rate of 62 per cent versus 51 per cent for those who do not.

These results indicate the ministry's outreach and extension efforts are meeting producers' needs and effectively demonstrating the value such practices bring to a producer's operation.

However, uptake of new practices for energy efficiency, agriculture waste management, and soil conservation remains low. In response, the ministry is increasing its research into agriculture waste management, energy use, and soil conservation so it can better understand the challenges and opportunities for producers in adopting sustainable practices.

Under Growing Forward 2, the adoption of practices that reduce the risk of agriculture contaminants leaving producers' operations and degrading water quality was cost-shared with producers. In 2015-16, 478 projects were funded with over \$5 million in grants disbursed as follows: \$1.64 million to individuals, \$3.03 million to farm businesses, \$330,000 to not-for-profit organizations, and \$346,000 to other levels of government.

In our progress toward achieving this desired outcome, we use the following performance measure.

Environmentally sustainable agriculture practices

YEAR ENDING AT MARCH 31

Performance Measure 3.a	Actual 2011-12	Actual 2012-13	Actual 2013-14	Actual 2014-15	Actual 2015-16	Target 2015-16
Average percentage of improved environmentally sustainable agriculture practices adopted by producers (biennial survey)	55%	n/a	56%	n/a	55%	58%

Source: Agriculture and Forestry.

Notes: Survey is conducted every second year. In 2016 adoption of the practice “extending the grazing season” was removed from the survey as the ministry no longer provides program funding to support this practice. Thus, the eligible practices tracked under this performance measure were reduced to 40 from 41. Recalculating the prior years’ results based on the 40 practices shows no change in the 2011-12 result of 55 per cent while the 2013-14 result of 56 per cent decreased to 55 per cent. Neither change is significant enough to impact comparability of 2015-16 results to prior years.

An Environmentally Sustainable Agriculture Tracking Survey is used to indicate whether producers in Alberta are working in a manner that protects the environment. This survey measures the progress related to adopting 40 key environmentally sustainable agriculture practices by Alberta producers within the areas of manure management, water quality and quantity, wildlife habitat conservation, grazing management, general practices, agriculture waste management, energy use and climate change, and soil conservation. This survey also informs decision-making related to the ministry’s agri-environmental programs.

The average percentage of adoption for the 40 key environmentally sustainable agriculture practices by producers was 55 per cent, which is three per cent below the target. There is no statistical difference between the 2015-16 result and results from prior years.

There is variation in the level of adoption of environmental practices across the eight agri-environmental risk areas. The practices with the highest adoption rate (over 75 per cent) were used to address grazing management and water quality and quantity issues. In contrast, less than 25 per cent of applicable environmental practices were adopted to address environmental risks associated with soil conservation, agricultural waste management, and energy and climate change. This is possibly due to regional variability in environmental conditions and lower awareness of new energy technologies. When averaging the eight levels of adoption together, these lower results tend to bring the overall result down, which in itself does not reflect the true environmental stewardship of producers at the farm level. These individual results in the survey provide a source of information for guiding current and future agri-environmental programming, policies, and regulations.

Priority Initiative 3.2 – Facilitate improvements in agricultural water conservation, efficiency, productivity, quality, and supply.

The ministry helps the irrigation sector capitalize on enhanced economic opportunities, operate as good environmental stewards, and contribute to vibrant rural communities. The irrigation sector must maintain its social license so it can continue using water for crop production. Continuous improvement of water-use efficiency allows irrigators to essentially grow more crops with less water. This adaptation contributes to the sector’s social license and ensures water is available for additional economic development, delivery to rural Alberta communities, and healthy aquatic ecosystems in southern Alberta.

In 2015-16, \$19 million went toward irrigation rehabilitation, which improved the efficiency of water conveyance infrastructure. Under Growing Forward 2, an additional \$2.1 million was disbursed to 235 applicants to improve efficiency of on-farm water application. To support sustainable water use, the program was adjusted to incentivize producers to move away from inefficient gravity and wheel-move irrigation systems to better technology.

Results from these improvements are tracked, compared to goals outlined in the ministry’s irrigation strategy, and publicly reported on the ministry’s website at www.agric.gov.ab.ca.

Priority Initiative 3.3 – Ensure Alberta’s forests are managed sustainably and responsibly for environmental protection and biodiversity.

Sustainable and responsible management of Alberta’s forests requires policy and operational procedures based on current and credible science. Current and credible science informs the setting of targets for the volume of timber harvested and reforestation. Due to the multiple resource users and stakeholders involved in timber harvesting and forest management, an ongoing challenge is the varying expectations around resource use and what is considered responsible and sustainable.

The ministry developed a science-based directive to increase the amount of trees to be retained within a harvested area to maintain biodiversity. In 2015-16, Agriculture and Forestry acquired Light Detection and Ranging (LiDAR) data spanning 1,425,700 hectares of northwestern Alberta. The LiDAR data will be used to identify sensitive habitats and provide detailed topographical information, which will inform resource management decisions. The ministry also uses multi-stakeholder sessions to improve communication with stakeholders.

In our progress toward achieving this desired outcome, we use the following performance measure.

Forest management: timber harvest

YEAR ENDING AT MARCH 31

Performance Measure 3.b	Actual 2010-11	Actual 2011-12	Actual 2012-13	Actual 2013-14	Actual 2014-15	Target 2014-15
Sustainable timber harvest by						
Annual allowable cut (million cubic metres)	29	30	30	31	31	Harvest does not exceed annual allowable cut
Harvest (million cubic metres)	20	20	20	21	21	

Source: Agriculture and Forestry.

This measure reflects Agriculture and Forestry’s ability to manage Alberta’s timber resources in a sustainable manner. It indicates the status of Alberta’s timber supply by comparing the actual annual timber harvest with the long-term annual allowable cut, as set by the ministry. The target is to keep Alberta’s annual timber harvest at or below the annual allowable cut (AAC).

Note, the majority of Alberta timber dispositions are in effect for more than one year and harvest is balanced over a five-year period. Yearly harvest levels may be greater than the AAC; however, to ensure sustainability, harvest levels cumulated over the five-year period do not exceed the AAC within each planning area.

The 2015-16 results indicate the actual timber harvest (21 million cubic metres) was 10 million cubic metres below the approved AAC (31 million cubic metres), meeting the target. Compared to the 2014-15 results, both the harvest and cut levels remained the same, leaving the gap unchanged from the previous year.

Since 2009-10, the provincial AAC has ranged from 28 million to 31 million cubic metres, while the actual harvest has ranged from 20 million to 21 million cubic metres during the same time period. The gap between the harvested and allowable cut has increased from 7 million to 10 million cubic metres. Fluctuations in total harvest volume from year to year can reflect trends in lumber and pulp markets; current lumber and pulp market conditions have not incentivized harvested levels to increase substantially.

In our progress toward achieving this desired outcome, we use the following performance measure.

Forest management: reforestation

YEAR ENDING AT MARCH 31

Performance Measure 3.c	Actual 2010-11	Actual 2011-12	Actual 2012-13	Actual 2013-14	Actual 2014-15	Target 2014-15
Percentage of forest regrowth as a result of reforestation	97.4%	97.6%	97.3%	97.9%	97.5%	98%

Source: Agriculture and Forestry.

This measure tracks the rate of forest regrowth following timber harvest, ensuring sustainability of our forest resources. Reforestation is required by law and a critical component to forest sustainability following industrial harvesting. Monitoring reforestation in relation to provincial standards is an essential part of forest sustainability and assures the continued flow of economic, social, and environmental values Albertans expect from their forests.

The percentage of forest regrowth for the 2014-15 timber year is 97.5 per cent, compared to a target of 98 per cent, and is consistent with the values achieved in previous years. Forest regrowth rates have been

achieved largely due to the effective silvicultural practices used in reforesting harvested areas.

Natural forests exist within a wide range of variable conditions that are affected by weather, fire, disease, and pests. Actions such as prompt reforestation activities following harvesting and better early seedling growth resulting from more appropriate site preparation enhance early seedling establishment and growth. Additionally, conservative re-growth rate targets have historically been assumed given poor young forest forecasting techniques. Successful forest management and selection and application reforestation techniques have resulted in vigorously regenerating young forests.

Climate Change

Alberta's Climate Leadership Plan is a key government initiative. Although agriculture is a minor energy user, it is a significant contributor of emissions. The challenge is to mitigate emissions through adoption of better technologies and practices. Adoption of energy efficient technology typically results in payback in less than two years, making the industry well suited to adaptation. In 2015-16, a total of 248 grants were given to individual producers, farm businesses, and not-for-profit organizations worth a combined \$3.06 million. The solar photovoltaic program incentivizes the move from carbon-based energy to renewable sources; the program issued 23 grants in 2015-16. Development of a comprehensive plan to encourage industry adoption of new practices is underway.

A fundamental aspect to adoption of new practices is having sound, science-based evidence arrived at through applied research. In response to this need, Agriculture and Forestry launched the Farm Stewardship Centre in Lethbridge. The centre focuses

on applied research, measurement, and verification of current and future agri-environmental stewardship issues. In 2015-16, projects at the centre included nitrogen use efficiency for greenhouse gases and phosphorous filtration of surface water run-off.

As a member of Tree Improvement Alberta, the ministry completed the three-year Tree Species Adaptation Risk Management project — a climate change adaptation project funded primarily through the Climate Change and Emissions Management Corporation. The project looked at the genetic suitability of various seeds and vegetative materials for different climate conditions, especially drought. Ensuring the seeds used for reforestation will survive in the face of changing climate conditions secures the health and productivity of Alberta's forests and the forest industry. The results from this project are implemented through the many forest companies that plant trees on public land. Complete results for the project are available online at www.ccemc.ca.

Desired Outcome Four: Alberta's agriculture and forest industries are more diversified and maximize product value

In working toward achieving this desired outcome, the ministry identified the following priority initiatives in its 2015-18 ministry business plan.

Priority Initiative 4.1 – *Support and leverage industry investments in identifying new products, processes, and services that result in increased diversification and value-added opportunities.*

Agriculture and Forestry stimulates new investment in the value-added food and agri-product processing sectors by helping businesses develop new products and improve their market access.

The ministry provided \$14.4 million to support market development and automation and efficiency. Of this \$14.4 million, \$12.7 million supported automation and efficiency and the remaining \$1.7 million supported market development. These grants linked companies with retailers, increasing the natural products and ingredients industry; expanded processing facilities; and helped agri-processors access new markets. These grants stimulate improvements in productivity, efficiency, and energy efficiency through the adoption of best practices, innovative technologies, and state-of-the-art processes.

A challenge Alberta food processors face when accessing new markets is meeting the variety of requirements from regulators, certification bodies, and customers. The ability to successfully identify and meet these requirements is fundamental to accessing markets and remaining competitive. Agriculture and Forestry provides resources that guide companies through the following steps: determine their ability to meet a requirement; address gaps; integrate new components into their systems; maintain and improve their systems; and prove they are meeting all requirements. A lesson learned from providing this type of support is that, though companies found the resources valuable, the information can be overwhelming. In response, the ministry is developing an e-learning program to make the information easier to work through.

Priority Initiative 4.2 – *Increase the uptake of bio-based product development and processing.*

Opportunities exist to diversify Alberta's economy by transforming agricultural and forestry biomass and organic waste streams into renewable bio-based products, biochemicals, biofuels, and other natural ingredients. These waste materials, such as livestock manure and wood wastes, are typically destined for landfills. By creating new value-added products, industries could attain a higher value for its products, attract capital investment, and stimulate innovation. Other economic spinoffs could include new green jobs, economic diversification, rural development,

and gross domestic product expansion. Replacing petroleum-derived products with bio-based alternatives also reduces Alberta's carbon footprint, supporting Alberta's Climate Leadership Plan while promoting social license.

The biggest challenge facing bio-based product development and processing is the lack of infrastructure capacity. Investment is required to secure the specialized equipment necessary to scale up and develop further expertise in the field.

Priority Initiative 4.3 – Empower Alberta research and knowledge transfer associations to diversify agricultural production and processing, including new crop varieties and improved cropping, forage and livestock production practices.

Agriculture and Forestry partners with applied research associations to share information on new crop varieties, crop management practices, and agronomic practices. Adoption of cutting-edge techniques that result from these partnerships enables industry to remain competitive in a global market.

These partnerships are challenged, however, by significant staff turnover at research associations and the lack of alignment between government and industry timelines. To overcome these difficulties,

Agriculture and Forestry has provided technical and scientific support through its own staff and continues to improve its internal processes to meet its partners' needs.

A highlight from 2015-16 is the registration of two new barley varieties for commercialization. One variety is under evaluation as being suitable for the craft brewing industry. The second variety has high resistance to the disease *Fusarium graminearum*.

Priority Initiative 4.4 – Expand opportunities for entrepreneurs to use established facilities for value-added processing, product development and commercialization.

Alberta is a net exporter of raw agricultural commodities to other countries, where value is then added through processing. This priority initiative is intended to increase the value-added food processing industry in Alberta, which could in turn diversify the province's economy and increase profitability and sustainability. Despite the importance of value adding, many Alberta food processors lack the scientific expertise and facilities to develop new products. Agriculture and Forestry maintains the Food Processing Development Centre and Food Science and Technology Centre to bridge these resource gaps and reduce the processor's financial risk. Between the two centres, 130 applications for technical assistance were received in 2015-16.

The success of this priority initiative has translated into an emerging challenge. Applications in 2015-16 increased over 30 per cent from the prior year, with applicants waiting up to six months before their project started. Resources at the centres were strained, with personnel and space becoming limiting factors. Unfortunately, some food processors moved to out-of-province centres, which could result in those companies keeping their business outside

Alberta in the long term. The government responded by approving expansion of the Food Processing Development Centre. However, expansion does not completely mitigate the possibility of losing some business in the short term, as completion is still three years away. Subsequently, the centre is reviewing its internal processes and organizational design to find improvements; for example, the application process may be revised to identify applicants who require more business planning before a project starts.

Agriculture and Forestry pursues other value-added processing and development opportunities that will benefit industry. In 2015-16, the ministry completed pre-commercial trials for feeding camelina cake to laying hens and pigs. The trials also demonstrated camelina cake can enrich eggs and pork with Omega 3 for human consumption. Camelina cake is currently considered a waste by-product from processing camelina, an oil seed crop. However, camelina cake is a good dietary source of protein and energy. If commercialized, camelina cake could displace expensive imported feed such as soybean, cutting costs for producers. Feed represents as much as 75 per cent of production costs for livestock producers.

In our progress toward achieving this desired outcome, we use the following performance measure.

Product development and commercialization

YEAR ENDING AT MARCH 31

Performance Measure 4.a	Actual 2011-12	Actual 2012-13	Actual 2013-14	Actual 2014-15	Actual 2015-16	Target 2015-16
Number of value-added products developed and successfully introduced into market with assistance from Agriculture and Forestry	157	216	217	220	227	176

Source: Agriculture and Forestry.

This measure tracks the number of value-added products developed and introduced into market with support from ministry staff. Value-added products refers to primary agricultural commodities that have undergone a change in physical state to achieve enhanced product value. This measure does not reflect economic benefits such as revenue growth, job creation, or investment that may have been generated from these products.

The ministry, through its food grade pilot plant and associated food technology and consumer science facilities at the Food Processing Development Centre, the Consumer Product Testing Centre, the Food Science and Technology Centre (Brooks), and the Agri-Value Processing Business Incubator, facilitates value-added processing of agriculture commodities to better meet consumer needs in the areas of food safety, quality, health, and convenience.

We facilitate new and diversified product development and commercialization by providing scientific, technical, and business development expertise, helping producers and agri-processors develop new and improved value-added products for local

and overseas retail markets. Our services help start-up companies reduce the risk of investing in full commercial production at the idea stage and help established companies access short-term scientific consultancy services on a competitive fee-for-service basis.

In 2015-16, a total of 227 new value-added products were developed and introduced to market with assistance from Agriculture and Forestry, continuing the upward trend in results over the past seven years. The actual result is 29 per cent over the forecasted target. This result is in part due to the increased funding for agri-processing and the additional ministry staff dedicated to service the needs of Alberta food industries. It allowed the ministry to increase uptake of its short-term consultancy services provided to agri-processors. The result can also be partially attributed to the success of the Growing Forward agreement, which provided grants to develop and commercialize 74 per cent of the new value-added products. Future performance may vary due to the difference in the length of time it takes to develop a product from concept to commercialization.

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Priority Initiative 4.5 – Enable research-based partnerships with industry-focused institutions and other jurisdictions.

The food processing industry requires partnerships in scientific research to remain competitive in an increasingly complicated manufacturing sector. Collaboration with industry is necessary to efficiently and effectively target research investment. Consumers are looking for healthier products, ethnic flavours, and “clean labels” or “free-from” products. Processors require access to scientific expertise and infrastructure to conduct product and process development.

This priority initiative is intended to increase the food processing industry’s ability to respond to consumer needs and desires through innovative, science-based solutions. Knowledge gained attracts further investment in new technologies and processing equipment, positioning Alberta’s agriculture value chain to increase capacity, competitiveness, and profitability.

Two centres, the Food Processing Development Centre and the Food Science and Technology Centre, have successfully led applied research projects for many years, including nine projects in 2015-16. The nine projects addressed priority concerns for consumers such as reducing sodium in processed meats, validating heart health claims on baked goods, and developing plant-based protein products. A challenge has been disseminating this valuable information to industry. In response, the centres established the Healthy and Enhanced Meat Research Project, an over-arching project to more effectively share the information gained through research with the meat industry. Engagement sessions with key external stakeholders and a needs assessment provided better understanding of industry needs and perspectives. Since this project was successful in addressing the challenge of sharing research results, this approach will be expanded to non-meat sectors for 2016-17.

Agriculture and Forestry leveraged funds from industry-focused institutions and other jurisdictions to conduct industry-focused agronomic research. Through 25 collaborative research projects in 2015-16, producers gained Alberta-specific information on diverse topics such as crop variety performance, plant disease management strategies, and fertility management practices to achieve the greatest returns with minimal environmental effects. Timely, region-specific information allows producers to quickly take advantage of emerging market opportunities.

Did You Know?

Less than 10,000 acres of lentils were grown in Alberta prior to the year 2000. Lentils are now grown on an estimated 250,000 acres and may reach 350,000 acres in 2016, mainly in response to market opportunities on the Indian sub-continent.

A significant achievement this past year was development of a five-year Alberta Beef, Forage and Grazing Centre agreement. As an industry-government partnership, the agreement coordinates and advances research and extension activities with the long-term goal of improving the productivity, competitiveness, sustainability, and land- and resource-use efficiency of the forage-beef system. The need for such an agreement arose from industry concerns about the lack of essential applied forage research and extension for beef producers.

In our progress toward achieving this desired outcome, we use the following performance measure.

Investment by collaborators

YEAR ENDING AT MARCH 31

Performance Measure 4.b	Actual 2011-12	Actual 2012-13	Actual 2013-14	Actual 2014-15	Actual 2015-16	Target 2015-16
Research and development investment by collaborators leveraged through ministry resources (in \$ millions)	6.2	6.4	4.8	5.2	5.3	6.4

Source: Agriculture and Forestry.

This measure tracks the amount of funds leveraged from outside sources for applied agricultural research and development, and provides an indication of our success in building partnerships with external collaborators. External collaborators include industry organizations, producer groups, private companies, universities, government departments, and agencies. The research and development projects covered under this measure include value-added processing, livestock development, crop diversification, and environmental sustainability.

In 2015-16, Agriculture and Forestry collaborated with industry to conduct 87 research and development projects, leveraging \$5.3 million to fund innovative solutions in the primary agricultural production and value-added processing sectors relating to productivity, competitiveness, and profitability.

While the 2015-16 result is a slight improvement from the previous year, it is lower than our forecasted target. The target was based on historical performance from the preceding five years and was higher due to the completion of major external-funded projects in 2012-13 that are not likely to be repeated in the next three years. The ministry aims to improve results by continuing to build strong collaborative relationships with industry; maximizing resources, including staff, related to research and development projects; being aware of emerging drivers and trends (e.g., consumer demand for healthy and enhanced food products) that may influence research and development priorities, as well as being supported by private and public collaborators; and implementing programs and activities that ultimately lead to research investment.

Priority Initiative 4.6 – Partner with other ministries and the forest industry sector to advance the Alberta Forest Products Roadmap, which identifies opportunities for diversifying forest products and markets.

Under the Forest Products Roadmap initiative, representatives from forest companies met with government officials to discuss the future of the sector. There was optimism the sector could be an engine of growth for rural Alberta and a stalwart of

the emerging bio-economy. During discussions, some representatives raised concerns about the roadmap. In fall 2015 and in response to these concerns, Agriculture and Forestry replaced the roadmap with the Strategic Forestry Initiative.

Desired Outcome Five: Alberta has thriving rural communities

In working toward achieving this desired outcome, the ministry identified the following priority initiatives in its 2015-18 ministry business plan.

Priority Initiative 5.1 – Support positive economic development in rural Alberta that enables producers and agriculture and forestry businesses to grow and succeed.

A key aspect of this priority initiative is the ministry's coaching services to 13 associations funded through the Agricultural Opportunities Fund. Coaching focuses on increasing competitiveness, environmental sustainability, and profitability. A challenge has been

that the quality of these associations' work has come under scrutiny, which prompted the ministry to engage the associations on improving their operations, governance, and communication with boards and chairs to ensure high-quality outcomes.

Priority Initiative 5.2 – Increase business and entrepreneurship capacity in rural Alberta.

Agriculture and Forestry ensures rural businesses have the knowledge and support needed to capitalize on new opportunities, invest in innovation, and enhance competitiveness. This priority initiative is supported through one-on-one business coaching on various topics including market details, risk management, and revenue options.

Highlights from 2015-16 include coaching 23 processors on expanding their sales channels to include e-commerce, retail, and direct-delivery markets. An ongoing challenge is providing robust business coaching that helps businesses grow in intentional ways; for example, some entrepreneurs are seeking quick answers and jumping in without a solid business portfolio.

Priority Initiative 5.3 – Improve access to capital for rural entrepreneurs and businesses.

Agriculture Financial Services Corporation (AFSC) has made significant progress to improving access

to capital for rural entrepreneurs and businesses. Lending results were as follows:

AFSC Lending Results	<i>M = millions • B = billions</i>	2015-16 Actuals	2014-15 Actuals
Total lending portfolio		\$2.2B	\$2.1B
Annual (April 1 to March 31) lending			
• Alberta Farm Loan Program		\$395.8M	\$368.5M
• Commercial loans		\$61.0M	\$71.8M
• Revolving loans		\$49.3M	\$31.5M
• Value Added Agri-business Program		\$37.1M	\$45.1M
• Specific Guarantee loans		\$18.6M	\$5.4M
Annual (April 1 to March 31) lending totals		\$561.8M	\$522.3M
<i>Approximate dollar value of projects enabled by every \$1 AFSC lends</i>		1.51	1.40

AFSC authorized \$561.8 million in new and direct loans and guarantees for the period ending March 31, 2016, an increase from the \$522.9 million reported in 2014-15. This generated \$846 million of investment in the province's agriculture, agri-industry, and value-added sectors in 2015-16. The total AFSC lending portfolio increased in 2015-16 to \$2.2 billion, compared to \$2.1 billion in 2014-15.

The farm loans program continued its positive momentum in 2015-16, with an increase in loan approvals and approved dollars. This positive result is partly attributed to a rise in farm land values (up 11.6 per cent). Stronger cattle prices and better than expected crop yields also contributed to the increase in approved farm loans and dollars.

Alberta's economic slowdown has been identified as the primary reason for the reduced demand for two of AFSC's products: commercial loans and the value-added agri-business program (VAAP). These two loan programs saw a year-to-year decrease of 15.3 per cent and 17.6 per cent, respectively. Furthermore, requests for restructured VAAP loans increased, as well as client requests for interest-only and re-amortization submissions. AFSC is receptive to these client applications, approving those who have taken appropriate action.

AFSC has also been active in finding solutions to the Government of Alberta's challenge of diversifying

the province's economy and economic growth in rural communities. AFSC has focused on two changes to existing products to address these challenges: increasing AFSC's lending limit from \$5 million to \$25 million and replacing the benefit incurred under the Beginning Farmer Incentive program with a rebate.

Improved access to capital is needed for Alberta's small and mid-sized entrepreneurs to flourish. AFSC can better meet the financing needs of growing farms, value-added businesses, and commercial entities by increasing the lending limit. The current \$5 million limit places AFSC outside the market for many capital intensive, value-added operations in the agriculture, forest, and commercial sectors. If approved for implementation, lending volumes are projected to grow by as much as \$100 million over four years.

AFSC's existing farm loan program offers an incentive to all producers with an individual net worth under \$500,000 (reducing interest rate to 1.5 per cent for up to five years on a maximum loan of \$500,000). The proposed Beginning Farmer Rebate program would target younger producers. The rebate would only be available to producers under 45 years old, be one-third of the annual published five-year Alberta Farm Loan Rate (for up to five years), and the maximum net worth would be raised to \$1 million. If approved for implementation, AFSC lending volumes could grow an additional \$50 million per year.

In our progress toward achieving this desired outcome, we use the following performance measure.

Investment in rural business

YEAR ENDING AT MARCH 31

Performance Measure 5.a	Actual 2011-12	Actual 2012-13	Actual 2013-14	Actual 2014-15	Actual 2015-16	Target 2015-16
Total investment leveraged in rural businesses facilitated through AFSC lending services (in \$ millions)	658	663	644	716	697	699

Source: Agriculture Financial Services Corporation.

Note: Values reported for investments are a proxy measure based on approved loans. Not all loans are disbursed, and in some cases, there may be timing differences between approval and disbursement of loans.

This measure gauges success of AFSC in ensuring farm and rural businesses can access capital to foster development and growth. AFSC facilitates capital investment in rural business development through its lending products, services, and partnerships. These partnerships create flourishing and profitable businesses and support the overall rural economy.

Regardless of the economic cycles that can create difficulties in accessing capital for businesses in rural Alberta, AFSC's flexible loan terms, long-term fixed rate financing, competitive interest rates, and reasonable agreement conditions help ensure that primary agriculture producers and rural business enterprises can access the capital necessary to foster growth. These lending services are demand-driven by the agriculture and rural business community, with total dollar investment in agri-businesses and farm loans serving as a proxy value for investment based on loans approved. Dollar investment is any fund (i.e., debt,

equity, or investment) that would be used to support the growth of farming and commercial activities.

The \$697 million in investments leveraged in rural businesses in 2015-16 fell just short of the target of \$699 million, which reflects the uncertainty in the amount of approved loans that are withdrawn during the fiscal year. However, the variance is negligible at less than one per cent difference. The result is also less than three per cent lower than in 2014-15 due to AFSC's participation in the Feeder Association Loan Guarantee Program and the increased uptake of loan guarantee by the cattle industry. Based on historical results, general economic outlook for the province, capacity, and business processes, the overall trend is increasing, with management's expectations of eight per cent growth annually, plus or minus one per cent.

In our progress toward achieving this desired outcome, we use the following performance measure.

Risk management

YEAR ENDING AT DECEMBER 31

Performance Measure 5.b	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Target 2015
Percentage of eligible seeded acres for major crop categories insured under Production Insurance:						
Annual crops	73%	75%	77%	76%	77%	77%
Perennial crops	23%	28%	26%	25%	25%	27%

Source: Statistics Canada and Agriculture Financial Services Corporation.

This measure gauges our success in providing customized insurance products to producers to offset the risks of agriculture production, based on type of crop, risk area, and coverage level selected. Production Insurance (AgrilInsurance) mitigates the effects of unstable production for Alberta producers by providing protection against losses caused by designated natural peril on annual and perennial crops.

AFSC's competitive market-responsive risk management solutions help producers operate successful farm businesses in the absence of effective

private sector tools or methods when natural and market events occur that are beyond agri-business managers' control. In the event of a downturn, effective risk management programs are essential to shorten the recovery time and provide a stable platform from which industry can achieve its full economic potential. By having a strong selection of choices, backed by sound financial management practices, Alberta producers are better protected against the risks of production, and are better able to be positioned for future success and sustainability.

In the 2015 calendar year, more than \$413 million was awarded under annual crop programs, including for production, hail, and spring price endorsement losses. Nearly \$61 million was awarded under perennial insurance programs.

The uptake of annual crops insured under Production Insurance was 77 per cent in 2015, which matches the stated target. This figure continues to be high due to the financial risk involved in crop production, high input costs, and commodity prices. The result inches closer to the assumed market saturation point of 80 per cent of arable acres. In total, 14.7 million acres and \$3.9 billion of risk is insured on annual crops.

The uptake of perennial crops insured under Protection Insurance was 25 per cent in 2015, which does not meet the stated target of 27 per cent and is the same

uptake from the year before. The seeded acres of perennials covered under Production Insurance are heavily influenced by growing moisture conditions and forage feed supply. Excellent growing moisture conditions are in most cases followed by a reduction in coverage level as some producers anticipate continuous good growing moisture conditions. Good moisture in the 2014 year resulted in strong hay crops. As a result there was increased carry-over of hay and other feed supplies. Because of the increased carry-over, more producers self-insured. Producers on the other hand maintain a high coverage for the annual crops as unfavourable growing moisture conditions may result in a total loss of crops or harvest. In total, 6.7 million acres and \$129 million of risk is insured on perennial crops.

Priority Initiative 5.4 – Develop long-term solutions to address labour challenges in the agriculture and forestry sectors.

Employers in the primary agriculture and agri-food processing sectors operate in a competitive business environment. These employers experience a variety of common labour challenges, including worker productivity, retention, and recruitment. These employers have additional challenges with workers who are reluctant to relocate to rural areas, despite rising unemployment numbers. Through the Workforce Development initiatives, the ministry assists industry with assessing and adopting technologies and automation to increase productivity; retaining workers and reducing turnover; recruiting within Canada and internationally; and improving the business's economic viability. Agriculture and Forestry distributed approximately \$136,000 to 11 agriculture industry clients and industry associations to implement long-term solutions to address labour challenges facing their operations.

Our focus is on filling labour shortages with unemployed and under-employed Albertans, including youth, indigenous people, and immigrant job seekers. Fewer young people are entering the agriculture sector and the seasonality of employment opportunities further contribute to primary producers facing labour shortages. The Green Certificate program attempts to attract high school students to the sector through an apprentice-style program offered in 241 high schools. Green Certificate provides trainees with opportunities to earn high school credits and credentials toward a career in agri-business. For 2015-16, there were 1,071 active trainees in nine curriculum areas with 445 graduates. A challenge to this successful program has arisen, partly due to a change in how schools are funded, with some schools levying additional user fees on students. Agriculture and Forestry is working with the Ministry of Education to rectify misconceptions that contributed to the user fees.



Priority Initiative 5.5 – Improve leadership capacity and skills development in rural communities.

Two broad programs, Growing Forward 2 and 4-H, focus on increasing leadership capacity and life skills development in rural communities. Programs under Growing Forward 2 include Business Opportunity, Business Development and Farm Safety Initiative, and Business Management Skills Development (BMS). Training under BMS, for example, focuses on increasing management capacity, leading to better decisions and industry growth. Together, these three programs disbursed grants worth \$2.9 million to producers, processors, and other agri-businesses in rural communities.

The 4-H's programming builds leadership capacity, business acumen, and collaborative relationships throughout rural communities to enhance industry's governance. The ministry completed a needs assessment of 4-H in 2015-16; the assessment will guide development of a strategic plan to ensure 4-H remains viable and effective into the future. However, not all parties involved in the assessment agree on the validity of the results and next steps. In response, the ministry is initiating collaborative processes to continue development of the strategic plan in the upcoming year.

Farm Safety

Farming and farms — from the size of the operations to the equipment used — continue to evolve. The ministry's farm safety efforts focus on increasing safety skills and practices and enhancing the safety culture on farms throughout the province. In 2015-16, Agriculture and Forestry provided education and outreach to 232 workers and owners through FarmSafe workshops; developed a one-credit course recognized by the Ministry of Education about young farm worker safety; and delivered funding to partner organizations in support of the Sustainable Farm Family program.

The government also passed the *Enhanced Protection for Farm and Ranch Workers Act* in 2015-16 to ensure safe worksites and conditions for Alberta farmers, their families, and employees.

The Act brings protection and compensation of non-family farm and ranch employees in line with protections already afforded workers in other sectors throughout Alberta. Agriculture and Forestry continues to work with the Ministry of Labour on implementation; the process to consult with stakeholders on regulations was approved by Cabinet and will be underway in 2016-17, with the application and nomination phase complete. Communication around the Act presented a challenge, leading to confusion among producers about the legislation's impact and concerns that safety requirements incompatible with the agriculture sector would be imposed. In response, the ministry is focused on extensive collaboration while developing associated regulations and clear communication going forward.