

# **A White Paper from Alberta's Agricultural Commodity Boards and Commissions: *A Strategic Research Proposal to the Minister of Agriculture and Forestry***

## ***Executive Summary***

The research programming of the Ministry of Agriculture and Forestry of the Government of Alberta has been in a state of flux for the past five years. Changing governing parties has led to a change in priorities and operating models. The 2019-2020 provincial budget has called for significant savings to be found in the area of primary agriculture. Industry recognizes the necessity of reduced government spending; however, also wants to emphasize the importance of government research funding and scientific programming to support industry competitiveness, sustainability and profitability.

Following a Chair's Roundtable on October 10, 2019, industry groups committed to developing a white paper to provide the Ministry of Agriculture and Forestry with industry recommendations for agriculture research in the key areas of: policy, funding and capacity.

The following recommendations will be supported within the white paper:

### **Key Recommendations for Developing Research Policy**

- 1. Establish agricultural research policy and set priorities in consultation with industry.**

### **Key Recommendations for Research Funding**

- 1. Transition to an industry governed and industry focused research funding model.**
- 2. Transition the Ministry's internal research funding program to an arm's length organization.**
- 3. Establish one governance board with equal representation between the crop and livestock sectors.**
- 4. Establish research management with expertise across the sectors.**
- 5. Establish a lean, efficient administration to ensure the most efficient utilization of resources.**

6. **Determine a fair and transparent funding split between the crop and livestock sectors.**
7. **Further study regarding the most efficient administration of food and bio-processing research funding and infrastructure and AI's current agricultural research funding portfolio.**

### **Key Recommendations for Conducting Research**

1. **Maintain current health and assurance functions in the crop, livestock, poultry, and food sectors within Alberta Agriculture and Forestry while increasing connectivity amongst units and facilities across the province.**
2. **Maintain current extension services, ideally managed under one branch, unit or division, with greater connectivity to the industry and external research institutions.**
3. **Transition the Field Crop Development Centre and the crop genetics program out of Alberta Agriculture and Forestry and into the Faculty of Agricultural, Life and Environmental Sciences at the University of Alberta.**
4. **Investigate alternative models for the transition of crop diversification and regional crop adaptation research, including the Crop Diversification Centre – South (Brooks) facility.**
5. **Transition apiculture research to Alberta's agriculture colleges, in consultation with industry.**
6. **Transition critical livestock and poultry systems research positions to the University of Alberta, Agriculture and Agri-Food Canada or the University of Calgary Faculty of Veterinary Medicine, as appropriate for the expertise being transitioned, and in consultation with industry.**

The industry has a vision for a strong agriculture sector, supported by a Ministry that is supportive of the priorities of producers. Funding and programming should be directed by those with the best understanding of the needs of the industry, in collaboration with a government that has the needs of the industry, public good and economic competitiveness and sustainability as high priorities.

## Acronym List

AF- Alberta Agriculture and Forestry

AI- Alberta Innovates

ALES- Agriculture, Life and Environmental Sciences

BIOB- Bio-Industrial Opportunities Branch

CDC-N- Crop Diversification Centre- North (Edmonton)

CDC-S- Crop Diversification Centre- South (Brooks)

CDC UofS- Crop Development Centre of University of Saskatchewan

EDTT- Economic Development, Trade and Tourism

FCDC- Field Crop Development Centre

FPDC- Food Processing Development Centre

GOA- Government of Alberta

SRDP- Strategic Research and Development Program

U of A- University of Alberta

## Industry Vision

The intent of this white paper is to outline a high-level proposal to the Minister of Agriculture and Forestry (AF) regarding optimal deployment of the Department's research resources. This white paper is focused on supporting strategic consensus between industry and the Minister. For that reason, the paper is intentionally conceptual in nature. If strategic consensus is achieved, a second, more detailed proposal will recommend a more precise deployment of resources.

The white paper examines future Government and industry roles under three key themes:

- 1. Developing research policy;**
- 2. Funding research; and**
- 3. Conducting research.**

Industry is aligned in their vision for the future of provincial agriculture research programming. This vision sees greater connectivity between industry and AF. Primary agriculture producers are the experts on their operations and the issues that affect their financial sustainability. Producers need to play a strong advisory and directional role in provincial agriculture policy and resource allocation.

### 1. Developing Research Policy

Industry recognizes that one of the core roles of a democratically elected government is to develop and implement policies in the interest of citizens, businesses and organizations. The expected outcome of ongoing government policy support for research is a more competitive and sustainable industry. Over time this more competitive industry will make larger contributions to the economic well-being of the province.

Industry organizations also lead the development of policy relating to the interests of their specific stakeholders, and they frequently lobby government on behalf of these stakeholders. This is a natural and healthy process in a democracy. **The industry supports a fundamental continuance of a healthy policy dialogue with AF and respects the ongoing policy roles of both industry and government.**

For a successful industry, it is imperative that the province consult with industry groups when setting their policies and priorities. Industry groups have a strong presence in policy advocacy on both the provincial and federal level and work closely with one another to gather evidence to ensure strong, cohesive messaging. There has also been considerable industry investment and effort to develop key research outcomes in priority areas, and government policies and priorities should be complementary to these initiatives. **Industry recommends that agricultural research policy and priorities be set in consultation with industry.**

### **Key Recommendations for Developing Research Policy**

#### **1. Establish agricultural research policy and set priorities in consultation with industry.**

In the next section, “Funding Research,” a new producer governance structure will be described that could be used as the foundation for an industry advisory group to provide feedback and direction on research policy. This type of model currently exists in other priority areas (e.g. Agri-Environmental Partnership of Alberta) and has proven to be an effective means for dialogue between government and industry that can be drawn on when designing such a group.

#### **2. Funding Research**

Producers have a long history of supporting agricultural scientific research within the province. A significant percentage of the levy of each of the individual organizations is allocated to research. To ensure that producers have proven, scientifically-sound solutions to their operational issues, they rely on leveraged funding from other funding partners, including government.

AF has a long history of co-funding research with industry; however, this funding has varied in amount, delivery model and ease of access. This creates uncertainty and inconsistency and can impede producers from accessing solutions.

Currently, research funding is offered through the Strategic Research and Development Program (SRDP) which is operated by the Ministry. Additional funding is provided through The Alberta-Canada Agreement under the Canadian Agricultural Partnership (CAP); however, because CAP funding is primarily targeted towards supporting extension, demonstration, and area-specific programming, it is not the focus of this paper.

Currently, SRDP does not effectively and efficiently serve the needs of producers in terms of government support for scientific research that benefits the industry. Program funding has been sporadic, and the decision-making process has been unclear with very little involvement from industry or consideration of industry needs and priorities. Producers believe that there are alternative delivery options for research funding that would better serve all stakeholders. **Producers recommend that AF transition to an industry governed and industry focused funding model.**

### Position within the Ministry

**It is recommended that the internal research funding program be transitioned to an arm's length organization.** This will better serve industry in several ways. Firstly, it will allow for industry to have clear and transparent direction for fund allocation. Secondly, it will allow unused funding to be maintained within the program at the end of the fiscal year. While research dollars are often more limited than the issues they help solve, industry does not want to support projects that do not have merit just to utilize budget before year end. Also, there are times when administrative delays stretch the execution and payment of projects over multiple fiscal years. By being situated at arm's length from the Ministry, the funding program will not be subject to bureaucratic constraints, and various service interruptions, including before and after elections.

### Governance

**Industry recommends that one governance board is established with equal representation between the crops and livestock sectors.** The livestock and crop industries depend on each other for their success. Livestock provides a domestic market for grain crops, and without a strong grain industry, Alberta's livestock producers would need to import feed, increasing their production costs significantly. Apiculture, contracted and open-pollinated crops, including many forages which support the livestock sector, rely on each other. Additionally, many producers have mixed operations, growing grains and specialty crops, keeping hives and raising livestock. Having a diversity of experience makes a board stronger, just like diversity can make a farming operation stronger. Having one board also reduces the overall number of directors which creates efficiencies. An even numbered board is required and 8-12 would be the optimal number to ensure

effective decision making and diversity of expertise. The board would elect its own Chair.

Each sector's board representation would be divided again amongst the various crops and livestock organizations to ensure all voices and industries are represented. For instance, if the board is composed of ten directors and five are from the cropping sector, those five seats would be further broken down for proportional representation amongst cereals, oilseeds, pulses, apiculture and specialty crops, like hemp, potatoes, forages, sugar beets or greenhouse crops. Likewise, representation is needed from the beef, dairy, poultry, pork and specialty livestock industries. Smaller sectors may need to "share" a board seat, with rotating representation. This is already fairly common in mixed-commodity agriculture organizations.

Commodity organizations would nominate a representative to fill director positions on the board. This would ensure that industry's voices are heard and that they have influence on funding decisions. This would also ensure that the directors are well informed on the issues of their industry. Each director would serve a term of three years, to protect against a concentration of knowledge and experience in only a few individuals. To start, term lengths would be staggered to ensure that all seats do not turn over at the same time to maintain consistency and experience.

The funding organization would provide a per diem for directors and cover any expenses required to attend meetings. However, salaries or large honorariums would not be provided. This would reduce governance costs.

## **Administration**

**It is recommended that research management be established with expertise across the sectors.** Management would review projects, liaise with researchers and commodity organizations, handle basic project administration, make project recommendations, and act as expert advisors to the board.

Management should be subject matter experts and able to critically judge proposals for merit and scientific rigor, as well as impact on the industry. Management would be well connected with the industry and research community and maintain strong contact with research managers, directors and personnel at the commodity organizations. Commodity organizations would provide input and

sector specific expert review for projects which are of interest and value to their industries to ensure all research funded is relative, impactful and in the best interest of producers. This is also an excellent method to determine co-funding opportunities. Current examples of this type of approach include the Agriculture Funding Consortium and the Saskatchewan Agriculture Development Fund. Ideally, the current online submission portal would be retained to reduce administrative burden.

An Executive Director, possibly with a part-time appointment, would oversee the funding program and ensure that proper governance procedures are maintained. The Executive Director would also serve as the key contact with the Ministry to report on research investments, impacts, and institute any policy or procedural changes. **A lean, efficient administration is recommended to ensure the most efficient utilization of resources.**

### **Funding Allocations**

Currently, there is no transparent funding allocation established between the livestock and crop sectors through the SRDP process. It will be necessary to **determine a fair and transparent funding split between the crop and livestock sectors.** While it is not realistic for these allocations to remain exactly proportional, it is imperative that the final funding allocations, once contracted, be communicated transparently. Within each sector, funding should be allocated based on the scientific merit and anticipated benefits of submitted projects. Additionally, all funded projects must be easily accessible to the public once executed. Communicating project results would primarily be the responsibility of industry groups (excepting those with inadequate resources to do so), while recognizing that government extension agents are an excellent resource to assist in dissemination of information.

It is important to note that, to this point, only primary agricultural production has been referenced. Currently, within SRDP, there is funding available for food and bioprocessing. While primary agriculture, food and bioprocessing are interrelated, and value-added processing is a key area for innovation in the agriculture sector, decision makers with expertise in primary production will find it challenging to adequately evaluate projects which primarily focus on food product development or bioprocessing. Alberta Innovates focuses on generation of new ideas, applied



testing, and commercialization of new products, which mirrors key areas of focus for food and bio-processing initiatives. In addition, AI currently funds food and bio-processing research, and maintains expertise in this area. AI also currently maintains a funding program in Smart Agriculture and Food Innovation. With these synergies, AI may be an ideal host for food and bio-processing research and development funding; however, the board of AI may need refocusing to ensure strength and experience in these areas, and concerns have been raised about separating primary agriculture from final food product development. Successful models in other jurisdictions should be examined for appropriateness in Alberta's research environment. **For these reasons, Alberta's commodity boards and commissions recommend further study before any action is taken regarding food and bioprocessing and AI's current agricultural funding portfolio.**

### **Key Recommendations for Research Funding**

- 1. Transition to an industry governed and industry focused research funding model.**
- 2. Transition the internal research funding program to an arm's length organization.**
- 3. Establish one governance board with equal representation between the crop and livestock groups.**
- 4. Establish research management with expertise across the sectors.**
- 5. Establish a lean, efficient administration to ensure the greatest investment in research.**
- 6. Determine a fair and transparent funding split between the crop and livestock sectors.**
- 7. Further study regarding the most efficient administration of food and bio-processing research funding and infrastructure and AI's current agricultural research funding portfolio.**

### **3. Conducting Research**

AF is unique amongst the agriculture-intensive prairie provinces in that AF maintains scientific staff and facilities to fulfill a research and development mandate. AF is also unique amongst other Ministries within Alberta; research capacity and funding within other sectors is focused within the Ministry of

Economic Development, Trade and Tourism (EDTT) within Alberta Innovates (AI) or one of its subsidiaries. In fact, EDTT, through the AI subsidiary InnoTech, has limited agriculture research capacity which, in our view, is poorly connected with the efforts of AF.

The province currently plays, and should continue to play, an essential role in regional research and development that ensures that Alberta's agriculture industry remains economically viable and competitive. However, not all of these essential services need to be the role and responsibility of AF if they could be delivered more efficiently and effectively elsewhere.

The following section will outline the key roles and responsibilities which we believe should remain within the Government of Alberta (GOA), either within AF or an alternative ministry. Other programs currently within AF where the primary stakeholders, including the provincial government, would be better served if the program were housed elsewhere are also detailed. Some facilities and programs have a more obvious transition plan than others, and these more easily transitioned programs are detailed below.

### **Essential Programs for the Government of Alberta**

Protecting the viability of Alberta's agriculture industry is a key role for the provincial government. This means something slightly different depending upon which particular sector one is considering. However, ensuring compliance to the acts and regulations that the Minister of AF is responsible for is an obvious responsibility, as is ensuring the health and safety of our food production system. Regional research focused on economic diversification and productivity within Alberta's environment should also remain a focus of GOA.

The following programs, separated by sector, may not represent an exhaustive list of AF responsibilities, however, they are key areas that should remain high priority for the province. A list of responsibilities that we suggest should be considered for transition to other GOA portfolios or other institutions within Alberta follows.

## Responsibilities that Should Remain within the Ministry of Agriculture and Forestry

### Crops Sector

In 2018, upon the release of the results of the federal Canadian Agricultural Partnership Science Cluster Program, Agriculture and Agri-Food Canada (AAFC) indicated that it would no longer be their mandate to support surveillance and monitoring of crop pests and that this should be a responsibility of the provincial governments. AF currently has resources in the 3 main classes of agricultural pests: weeds, disease and insects, and these resources should be maintained to conduct regional assessments of pest incidence, severity and future risks to productivity. These roles are not true “research” roles, but rather perform a key function of informing research programs in other sectors and contributing to larger prairie-wide initiatives. These roles also serve to support the *Agricultural Pest Act* and inform policy makers of changes to the pest landscape in the province. The unit responsible for plant health and assurance could be made more efficient and effective by ensuring stronger connections within the province, as resources are currently concentrated in Brooks and Edmonton. **Crop health, safety and assurance roles should be a primary function of AF and retained within AF.**

Within the Ministry, apiculture is included within the crop sector. AF is responsible for administering the *Bee Act*. The province has responsibilities to register beekeepers, monitor bee movement, carry out bee and hive health inspections, report diseases and act, as needed. One provincial apiculturist is retained by the province to support the *Bee Act* and act as a liaison between the industry and province. It is critical to the success of the industry that adequate resources are applied to these functions. **Bee health, safety and assurance roles should be a primary function of AF and retained within AF.**

### Livestock & Poultry Sector

A viable livestock sector and ability to export animal protein products is not only critical to the success of livestock producers but also provides a market for crop production. Ensuring that the products and animals we produce are safe and healthy is an important governmental responsibility and serves as a critical public good.

Within the Crops and Livestock Division of AF exists the Animal Health and Assurance Branch, which has responsibilities related to the Alberta *Animal Health Act* and associated regulations. This Branch performs a critical provincial role of surveillance and diagnostics in order to ensure animal health and safety for a competitive, sustainable, and safe domestic and export animal protein supply. **Animal health and assurance roles should be a primary function of AF and retained within AF.** We do recognize that significant improvements in diagnostic capacity could be realized with strategic partnerships that are currently under discussion, and support any attempt to strengthen Alberta's animal health diagnostic capabilities.

### Food and Bio-Processing Sector

Again, like the crops and livestock sector, AF plays a critical role in terms of health and safety in the food processing sector and these functions should remain within AF. The responsible positions are concentrated in the Food Safety Branch and include resources in animal and food microbiology, meat inspections and food safety surveillance. Food safety functions that are not the mandate of the Canadian Food Inspection Agency are the mandate of AF.

**It is recommended that the overarching safety, health and assurance responsibilities remain within AF, but that the Ministry work with industry and the various units to minimize overlap and find efficiencies with minimal service losses.** The economic risks of production and trade loss far exceed the costs of surveillance and monitoring.

There is a significant issue in terms of long-term, sustainable funding for surveillance, safety, health and assurance that must be resolved to improve program delivery and efficiency. Currently, many of these programs are funded on an ad-hoc basis through provincial CAP funds. Although the primary tasks are carried out by provincial employees, provincial employees are not eligible to apply for these funds. This leaves industry groups and other external groups applying for funding and acting as administration for provincial activities. This is an inefficient use of resources. Given the critical nature of these services, attention needs to be given to this funding situation to resolve the inefficiencies and guarantee appropriate resourcing for these activities.

## Industry Extension

Throughout nearly all sectors, AF maintains industry extension services, currently housed in several different branches. The industry views this extension role as a critical function of AF to ensure the sustainability and competitiveness of the sector, and recommends that these roles be maintained within AF, albeit reorganized for greater coordination and efficiency.

Currently, the Ag-Info Centre staffs resource agents and specialists that answer industry inquiries or provide referrals to the appropriate resource. Specialists relevant to this conversation include crop specialists, beef and forage specialists, poultry specialists, farm management specialists and commercial horticulture specialists. These specialists provide non-biased information to industry which will enable them to manage their operations successfully and within compliance of the various Acts and regulations that AF administers.

Currently, the Ag-Info Centre is housed in the Strategy, Policy and Extension Services Branch. However, extension specialists also exist in the Livestock and Crop Research Branch, and it is unclear why these extension roles are governed under different branches. **Thus, it is recommended that all extension specialists be brought under one unit or branch (possibly the Strategy, Policy and Extension Services Branch) and streamlined, in collaboration with industry, to ensure that the various sectors and regions of the province are appropriately resourced.**

Extension specialists need to be closely connected with industry groups and other research organizations outside of AF to ensure that they have access to all of the appropriate and timely information to provide to producers and that they are able to funnel relevant intelligence and concerns back to these partners. A comprehensive extension plan for these extension agents, developed with input from relevant industry stakeholders, would aid in consistent messaging, increase connectivity in extension activities across the agricultural value chain, and provide a clear understanding of roles and responsibilities of all parties involved in extension activities. There is an opportunity to review the current complement of government extension staff in light of a comprehensive extension plan and in conjunction with industry to ensure that sector needs are adequately addressed. Certain industry organizations may have the capacity, expertise, and preference to drive extension efforts internally, while other sectors highly value the support of

provincial extension agents to help further their extension capacity and capabilities.

### Transitioning Internal Capacity outside of Alberta Agriculture and Forestry

There are several units within AF that appear disconnected from the other research operations within the Ministry. Therefore, while these are considered critical to the success of the industry, it is recommended that they transition to different operating models, either within the GOA or at other non-government, public institutions.

### Crops Sector

#### Cereal Genetics and Field Crop Development Centre

Notably, the cereal genetics program located at the Field Crop Development Centre has been absent from the conversation on key functions of the GOA.

FCDC, located in Lacombe adjacent to a federal research station, has been operational since 1973 thanks, in a large part, to producers. The mandate of FCDC is to develop varieties for Alberta's crop industry- primarily barley. In 2017, 62% of Canadian barley was grown in Alberta, both for malting and feed purposes. With 70% of cattle feeding capacity located within Alberta, barley is still the dominant feed grain supporting cattle finishing in the province, along with providing the bulk of annual forage consumed by cattle. It also plays a role in the poultry, dairy, and swine industries. In addition to 2 and 6-row feed, forage, and malt barley, FCDC has capacity in winter and spring triticale and a high yielding spring wheat program, and up until recently, also a winter wheat program. Despite having 3 barley breeders on staff, in a 2018 report commissioned by the seed industry, only 3% of western barley breeding and seed production could be attributed to the program (JRG Consulting Group, 2018). The annual operations budget of FCDC is just over \$4 million.

FCDC's lack of success with commercialized varieties may be attributed to a number of factors. One that is very obvious is the challenge of working within the provincial government system, with the budget and human resource constraints and the revolving priorities that this brings. **Regardless of government intention to maintain capacity, producers would be better served by FCDC if it was under a new operating model.**

We propose that the provincial government no longer directly operates FCDC. Rather, we propose an alternative model, whereby FCDC would be operated by the University of Alberta (U of A), with funding and directional partnerships with the province and producers. With this model, FCDC would incorporate the U of A's existing wheat breeding program, as well as continuing the feed, forage and malt barley breeding program. We envision that traditional breeding and selection would be elevated with the full incorporation of a modern genomics and biotechnology program, along with a robust quality evaluation program to support both crops. New and existing agronomic resources at the U of A will complement the breeding programs to realistically and objectively evaluate management factors that will contribute to the overall success of varieties resulting from the program. This proposed arrangement is similar to the Crop Development Centre at the University of Saskatchewan, and an attempt to mirror its success in breeding superior varieties and forming meaningful industry partnerships, while continuing to serve the needs of Alberta crop and livestock producers.

While the specific details of the arrangement go beyond the scope of this document, ideally capacity, such as infrastructure, equipment, land-base and existing background intellectual property (namely germplasm), would be transferred in-kind to the U of A. The U of A would operate FCDC using their resources and existing grant funding opportunities to conduct research and train highly qualified personnel. AF would no longer directly employ staff at FCDC, but would provide funding to strategic chair positions, in areas such as cereal genomics, cereal and feed quality and barley breeding. AF would have an opportunity for input into the program through the renewal of this funding, as well as through operational funding which would pay for technical staff and a Director to oversee operations. These positions would complement new agronomy chair positions, as well as an upcoming Chair in Beef Production Systems, at the U of A that have been supported primarily via producer funding. FCDC would be governed by a Board of Directors comprised of representation from the U of A, GOA and industry.

By transferring FCDC from AF to U of A, a program would be created which would enhance capacity at U of A and other post-secondary institutions in Western Canada, decrease AF's financial contribution to the program, provide stability in priority research areas and direction to a long-term genetic program, and, most importantly, provide producers with improved regionally adapted feed, forage and

malt varieties from a competitive, cutting edge program. If implemented correctly, this arrangement would be a win for all parties involved.

### Crop Diversification and Sustainability of Cropping Systems

Alberta has unique and regionally diverse growing environments. Farmers grow crops from the U.S. border all the way up to McKenzie County in the Peace region. All soil zones are cropped and each area has its own challenges in terms of moisture, soil productivity, growing season length, disease, weeds and insects. The GOA should serve two functions in relation to this economic and ecoclimatic diversity of the province.

**The first role that should remain within the GOA is the diversification of our cropping systems.** As biotic and abiotic conditions change, farmers need options in their rotations to remain environmentally and economically sustainable. While genetic development of new crop alternatives may be the responsibility of other jurisdictions, including the private sector, it is an important role of the GOA to ensure that we adopt our management practices to successfully incorporate those crops into our systems.

Much of this type of work is carried out at Crop Diversification Centre-South, in Brooks. At the moment, these crops include greenhouse crops, potatoes, sugar beets and hemp, as well as a variety of other small acreage crops. If farmers are unable to grow an important large-acreage rotational crop due to abiotic or biotic conditions, then they need to have high-value, regionally adapted alternatives ready for their operations. Because of the regionality and the relationship to economic success and diversification, this is a key function for GOA.

Similarly, it is the responsibility of the GOA to ensure that our large acreage crops- pulses, canola, wheat and barley- remain viable options for Alberta producers. Currently, AF employs 4 agronomists who specialize in regionally adapted management research of our major crops. These positions are strategically located in Barrhead, Lacombe, Brooks and Lethbridge. While Agriculture and Agri-Food Canada (AAFC) employs agronomists, these positions are responsible for prairie-wide systems and cannot accommodate the regionality of Alberta. Therefore, this is another key function of the GOA and connects well with crop diversification.



As we have recommended that other cropping research units transition out of AF, it would negatively impact the above programs if they were to remain within AF. This would create further fractionation in the research landscape of the province. **Therefore, it is recommended that these functions transfer out of AF and transition to an alternative operating model. While there is potential for this model to be within Alberta Innovates, either under InnoTech, where there are already resources in cropping systems, or under a new subsidiary which focuses on agricultural diversification, models from other jurisdictions should also be investigated.** These programs should have strong ties to the extension role of AF, the applied agriculture science programs housed at the colleges throughout the province and the U of A. Most importantly, these roles need to have strong ties to industry. Therefore, the board composition of any operating structure needs to account for industry groups focused on crop diversification, including members from the livestock sector.

### Apiculture

The Apiculture Unit, within the Plant and Bee Health Surveillance Section, Livestock and Crops Division, houses two apiculture research scientists, one technologist and two technicians. The focus of the unit is primarily bee health, hive management and pollination and there are strong ties to programs in other institutions across the province and federally. While these research areas are critical to the industry, adequate resourcing is more critical than the institution to which they are tied. Currently, one scientist and two technicians are co-located at AAFC Lethbridge. **Applied apiculture research would best serve the industry if it was located at Alberta's agriculture colleges.**

### Livestock & Poultry Sector

#### Livestock & Poultry Research

The Livestock Systems Section, within the Livestock and Crops Research Branch, houses livestock research capacity including four beef research scientists, a livestock research scientist, two dairy research scientists, a monogastric research scientist, a livestock welfare research scientist, and two poultry research and extension scientists along with various technologists, technicians and analysts to support these positions.

Many of these roles have a strong tie, or ties, to other research institutions operated outside of the AF and GOA system. For example, some of the beef research scientists are heavily involved in Livestock Gentec at the U of A, while the dairy scientists are affiliated with the Dairy Research and Technology Centre, also at the U of A. Similarly, poultry research and extension scientists work closely with the Poultry Research Centre at the U of A. It is imperative that any restructuring maintain the integrity of these current research centres. There are also a number of AF researchers that are currently co-located at AAFC Research and Development Centers (AAFC Lethbridge, AAFC Lacombe) or universities (U of A).

These research areas are important to the livestock and poultry industries in Alberta, and further, a loss of research capacity in these areas would increase the burden on remaining researchers past their ability to manage additional projects. While it is critical that these research priorities continue to be adequately resourced, it is not critical that they remain within AF.

**It is industry's recommendation that the critical livestock and poultry systems research positions are transitioned to the U of A, Agriculture and Agri-Food Canada, or the University of Calgary Faculty of Veterinary Medicine, as appropriate for the expertise being transitioned, and in consultation with industry.** Recognizing the budget constraints faced by Alberta's post-secondary institutions and the federal government, AF will need to provide a source of funding for the positions and work with industry and the institutions to transition or taper this support once the positions are well established at the new institutions. Long-term commitments from all parties would be expected prior to any transitions occurring. A strong governance model would need to be in place to ensure continued industry involvement and input into the research and extension activities of any transitioned positions.

With the transition of crops and livestock research units and personnel to other institutions, we suspect multiple management and administrative positions would become unnecessary, which would provide some measure of cost savings to AF, even while those key positions are still receiving government funding support during the transition period.

## **Food Processing Sector**

### **Food Product Development Centre**

The Food Science and Development Sector is mainly focused at the Food Product Development Centre (FPDC) in Leduc. FPDC is a fully equipped pilot plant and product development laboratory facility and is unique in the AF research portfolio in that it also acts as an incubator for small to medium food processors who require their facilities and expertise. Processors have the opportunity to contract scientists at FPDC to conduct research and product development or they can supply their own equipment and utilize bays with HACCP services provided.

If the province chooses to transition FPDC to a new operating model, models from other jurisdictions should be examined to determine if an existing model would serve Alberta's industry. Depending on the results of this investigation, FPDC may be a fit as a new subsidiary or agency of AI. Not only does AI have the relevant experience of operating agencies, but they also have experience with fee-for-service models. AI provides support and granting opportunities for small to medium sized enterprises and entrepreneurs in the province, which would complement the offerings of FPDC well. By running on a fee-for-service basis and eliminating several management positions which tie it into AF, FPDC could increase its revenue, leading to a reduced level of funding for FPDC that would be provided by the government.

## **Bio-Processing Sector**

### **Bioprocessing Innovation Centre**

AF plays a small roll in bioprocessing through the Bio-Industrial Opportunities Branch (BIOB). Formerly located within the Agri-Food Discovery Place at U of A, the research is now located at the Bioprocessing Innovation Centre in southeast Edmonton. The group is small, with 14 FTEs on staff.

The mandate of BIOB is to provide industry with business development expertise and specialized knowledge to identify and create new opportunities; provide facility and knowledge for process/ product development and scale-up; and, support Industry and rural economic development. Given this mandate, like FPDC, it may be possible to transfer operations at the Bioprocessing Innovation Centre and BIOB to AI. However, if an alternative model, based on an examination of

existing models, is developed, it would likely be best to combine these programs under 1 operating structure.

AI subsidiary “InnoTech” would be a natural fit for BIOB. InnoTech currently has expertise and facilities focused on similar technologies as BIOB, including value added products research, engineered composites research, fermentation and fibre processing. Similar again to FPDC, the Bioprocessing Innovation Centre and BIOB could run on a fee-for-service basis and reduce its management team, greatly decreasing overhead costs and leading to reduced operational funding costs provided by GOA.

### **Key Recommendations for Conducting Research**

To summarize the recommended future state of current Alberta Agriculture and Forestry agricultural research capacity, the following recommendations can be made at this time to best serve the industry:

- 1. Maintain current health and assurance functions in the crop, livestock, poultry and food sectors within AF while increasing connectivity amongst units and facilities across the province.**
- 2. Maintain current extension services, ideally managed under one branch, unit or division, with greater connectivity to the industry and external research institutions.**
- 3. Transition FCDC and the crop genetics program out of AF and into the Faculty of ALES at U of A.**
- 4. Investigate alternative models for the transition of crop diversification and regional crop adaptation research, including the Crop Diversification Centre – South (Brooks) facility.**
- 5. Transition apiculture research to Alberta’s agriculture colleges, in consultation with industry.**
- 6. Transition critical livestock and poultry systems research positions to the U of A, Agriculture and Agri-Food Canada or the University of Calgary Faculty of Veterinary Medicine, as appropriate for the expertise being transitioned, and in consultation with industry.**

Given budget constraints and reductions in all Ministries of the GOA, including EDTT and Advanced Education, it is not possible to simply relocate positions and programs without reconsidering resource allocations. Because agricultural

research affects the sustainability and competitiveness of the sector, it is important that AF maintain relationships with the programs, including funding relationships, regardless of where they are ultimately housed. Programs must be set up with sustainable, long-term funding mechanisms and strong business plans which will allow them to provide stable and reliable support to the industry into the future. It is important to note that positions should be transitioned, not necessarily people, and these positions may or may not have the exact same function and in the same quantity as they exist currently. Programs should be considered to be “right-sized” rather than simply “down-sized” or transferred exactly as they are today.

These changes cannot and should not be made in haste, nor should they be implemented all at once. Each transition will provide learning opportunities to improve the transition of the next program. It is important that AF maintain an open dialogue and collaboration with industry and the target institution(s) through these transitions. Therefore, it is recommended that steering committees be established to fully develop the transition plans of each program. These steering committees can then be transitioned into advisory councils or boards to provide direction post-transition and should have representation from industry, AF and other affected parties, such as the destination institution. The most important step will be the development of the details governing the relationships between the parties.

### Next Steps

Alberta’s boards and commissions look forward to meeting with the Minister in the near future to collaboratively discuss the proposals in this white paper. If some consensus is reached, it may be useful to put together a small working group, comprised of industry representatives and department staff, to develop more detailed direction.

### Conclusion

There is an opportunity for both the Ministry and the industry to come together to discuss effective deployment of research resources. With visionary thinking, thoughtful planning and genuine goodwill, a brighter future for research will lead to a strengthened, more competitive, and profitable agriculture sector in Alberta.

## References

JRG Consulting Group (2018) Canada's Seed System: Economic Impact Assessment and Risk Analysis. Prepared for Seed Synergy Collaboration Group