



# Optimizing Risk in Animal Agriculture

## — Building a Canadian Brand —

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Prepared for:



**AgSights**

Data. Knowledge. Insight.

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## Executive Summary

This study was commissioned to identify current and emerging risks, as seen by business and thought leaders across several species sectors, as well as from others in positions of influence across the Canadian agri-food system. Input was gathered from forty-nine participants representing the pork, poultry, dairy, beef and small ruminant sectors. To gain a full food system perspective, processors, retail, academia and advocacy groups were also included.

Animal agriculture is big business in Canada, generating approximately \$24 billion at the farm level. As with any business, risk is a necessary component. Some risks, if managed properly represent opportunity, while some risks have the potential to cause serious negative impact. Those who take no risks will fall behind and their business will eventually fail. Despite tremendous investment by producers, agri-food businesses and federal and provincial governments, risk management in agriculture remains a constant challenge.

Analyses of the input received from interview and focus group participants, along with review of current references dealing with risk in agri-food production led to some key conclusions. First and foremost, the opportunity facing the Canadian agri-food system can only be met if some fundamental change occurs. All parties in the food system must define, support and rally behind a well identified Canadian Brand. International consumers must understand what Brand Canada means and have complete trust in that brand. In order to establish this trust, the brand must be supported by data collected by producers and those beyond the farm gate. And these data must allow direct comparison to international standards.

Attaining this brand status will not require the creation of new tools, for many already exist. It will involve a far greater use of existing tools, which will be accomplished through a mixture of clearer market signals and legislated requirements. It will also require an understanding, and actions to address the rapidly changing factors that affect risk in agriculture: globalization, technology and climate change. To deal effectively with these factors, Canadian agri-food must abandon the still prevalent sense of rugged individualism seen in some sectors and move beyond the thought of value chains to become true food systems. This change will require new thinking and action on the part of producers, producer groups, processors, retailers, exporters and every level of government.

A second key evolution, now close to complete, is the move from “Farm to Fork” to “Fork to Farm”. In each sector, one can now see the reality of consumer demand dictating production and product specifications. While this has caused challenges in terms of producer acceptance, as well as some conflict with sound science, it is a reality of the new world of food. The results of this study confirm the shift to “Fork to Farm” as Consumer was the highest rated factor when looking at results amalgamated across all respondents. Some commodities, primarily those that are supply managed, have adjusted to this reality while others have not begun to address it.

Analyses of the data revealed large differences in how specie groups view, rank and adapt to risk. Risks that scored highest across all producer groups included: government policy, farm management, and market access. Risks that scored low across species groups included: environment, technology, and finance. Risks that had variable rankings across specie groups included: consumer trends; disease/productivity; and processor/distribution. These rankings may be in part due to the process of data collection in which participants were asked to focus only on

five risk factors (four unprompted and one prompted). The consistent low ranking for finance may be a reflection of the age range of participants, with very few being at the stage of business startup.

From this study it is recommended that the following actions be undertaken:

1. **Brand Canada** must be clearly defined, measured with direct comparison to international standards and communicated to all stakeholders.
2. All parties in the food system must work more closely to ensure **consistency of messages** to Canadian and international consumers. Producer groups need to reach out to trade channel partners (processors/retail) on a regular basis to inform them of progress, listen to market feedback and develop action plans.
3. **Data are key**, and parties should work together to ensure that business owners have tools that allow easy capture and sharing with clear, legally binding means of defined access.
4. **We must not reinvent the wheel.** Industry and governments should invest in industry-led, (preferably whole farm) programs and existing tools that allow easy capture and sharing of data, all in support of the Canada Brand.
5. Producer groups need to **break existing silos to communicate and learn** across sectors for a more cohesive voice and most efficient use of resources.
6. All participants must recognize and effectively respond to the new reality posed by the move to **“Fork to Farm”**, through which the consumer is all important.
7. Risk management **programs offered by government should target** those producers that farm as a business rather than as a lifestyle and funding should focus on those sectors that have a clear vision and a demonstrated willingness to implement change.
8. **Leadership is needed**, preferably from industry but, failing that, from government, to avoid partially implemented changes (e.g., traceability). This leadership includes a strengthened extension system, incentives and regulations.
9. Government should ensure that regulatory initiatives are timely and that **negative consequences** be known and mitigated. Regulations should **treat domestic and imported product equally** so as not to disadvantage Canadian businesses.
10. All parties should work together to identify and **prosecute parties guilty of fraud involving food products** as these are a threat to the integrity of brands and the investment made in those brands.

# Optimizing Risk in Animal Agriculture

## Building a Canadian Brand

### Introduction

Risk is a nebulous term with a very broad range of application and scope of impact. Considering both the probability of occurrence along with the impact of that occurrence, in the life of a single farmer, a bad-tempered bull may be a far greater risk than the devastation caused by a foreign animal disease. Farmers are always adapting to new risks and learning to better manage those risks.

**Risk: the probability of occurrence combined with the severity of impact**

Effective management of risk is foundational to the survival and success of agri-food businesses. This study was initiated by AgSights, a member driven cooperative that has, for twenty-five years, been helping farmers to better manage risk. Many factors are in play within the agri-food system that ensure that farmers will need to better manage existing and new risks, in the coming years. By managing these risks farmers will be able to remain sustainable and increase exports all while meeting consumer demands, including those that involve nature capital<sup>1</sup>. The intention of this study was to identify high priority existing risks as well as emerging risks and then provide recommendations on how data can be used to better manage risk.

### Risk

There are several definitions of the term ‘risk’, but in its simplest form, risk is the possibility of an outcome with potentially undesirable effects. These effects include harm, danger, threat and uncertainty. Risk mitigation can be proactive to reduce the probability or impact; or reactive in which case one responds to the impact. Risk, furthermore, can lead to benefits (e.g. investing in the stock market).

Livestock production is a business with risks unique from other businesses. Unlike most other businesses, livestock production faces risks from weather, environment, disease and pests. Other uncertainties include: yields, input prices, output prices, new technology, interest and exchange rates, trade agreements, trade tariffs, regulatory requirements and consumer preferences.

In 2016 the USDA prepared a paper titled *Risk in Agriculture*<sup>2</sup>, and in it defined five types of risk: product risk, price or market risk, financial risk, institutional risk and human or personal risk. The authors of this report elected to use a more granular categorization of the elements of

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<sup>1</sup> Natural capital: “The world’s stocks of natural assets which include geology, soil, air, water and all living things”. World Forum on Natural Capital. Retrieved from <https://naturalcapitalforum.com/about/>

<sup>2</sup> <https://www.ers.usda.gov/topics/farm-practices-management/risk-management/risk-in-agriculture.aspx>

risk with the expectation that changes and evolution of risk in animal agriculture would be more identifiable. Similar to the USDA's classifications of risk, Farm Management Canada and the Agri-food Management Institute (AMI) defined 10 categories of risk (personal, functional, financial, business development, human resources, planning, legal, decision making, environment and public) as part of their Whole Farm Risk Management Toolkit (Appendix A: Whole Farm Risk Management Toolkit). Farm Management Canada also classifies risk into six groups (people, finance, market, management, business environment and production) as part of its AgriShield risk assessment and mitigation platform (Appendix B: AgriShield). The definitions of risk from the USDA, Farm Management Canada and AMI reveal the variation of definitions and categorizations of risk. Farmers currently have access to several existing risk management tools, including those that were mentioned and offered by Farm Management Canada and AMI.

Understanding the types of risk that exist, the probability of occurrence, and the potential benefits and losses associated with those risks, are important in navigating business decisions.

## Public Policy and Risk

In 2011, the Organization for Economic Co-operation and Development (OECD)<sup>3</sup> made the following recommendations when considering public policy in relation to risk.

1. Government policies should take a holistic approach to risk management. Risks occur throughout the supply chain from input suppliers, producers, transportation, processors, retail, through to consumers. A risk in one sector has impact on other sectors of the supply chain.
2. Agricultural risk management should focus on catastrophic risks that are rare but that cause significant damage to many farmers at the same time.
3. Subsidized insurance can provide disaster assistance but tends to crowd out private insurance and has not been successful in preventing additional assistance after the event.
4. Facilitating good “start-up” conditions – information, regulation and training – should be the primary role for government.
5. Government should not provide support to deal with normal risk as that should be the preserve of the farmers themselves.

Canadian farmers have been supported in their risk mitigation through several policy frameworks. The most recently announced, five-year Canadian Agricultural Partnership framework (CAP) continues several programs. These risk management programs focus specifically on producers. The goal of CAP is to continue to strengthen the agriculture and agri-food sectors, and to deliver the greatest benefits to farmers, food processors and Canadian families.

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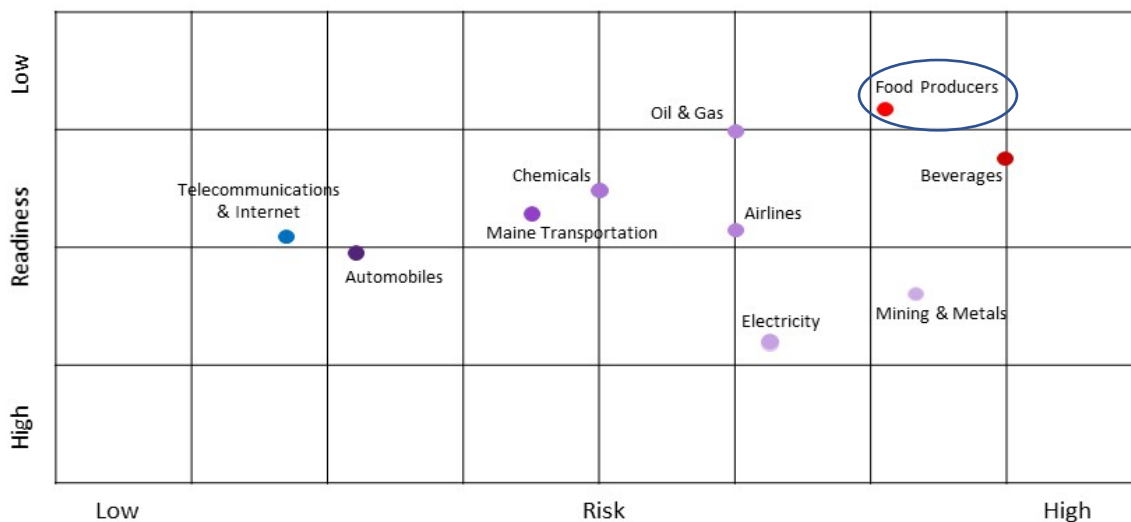
<sup>3</sup> OECD. (2011). Risk Management in Agriculture: What role for governments? Retrieved from [www.oecd.org/agriculture](http://www.oecd.org/agriculture)

CAP's stated goals are to:

1. **Grow trade and expand markets** to seize opportunities and address emerging needs.
2. Advance science and innovation, with an emphasis on **innovation and sustainable growth**.
3. Better reflect the diversity of new communities and enhance collaboration across different productions and **secure/ support public trust**.

Despite many years of support in risk management, a recent study by KPMG determined that agriculture “has made the least progress in reducing environmental intensity while exposure to environmental cost is growing rapidly”<sup>4</sup>.

**Figure 1. Risk and Readiness Matrix (KPMG, 2012)**



Recently the Canadian Agri-Food Policy Institute (CAPI), summarized the Advisory Council on Economic Growth’s *Unleashing the Growth of Potential Key Sectors*<sup>5</sup> report. CAPI’s summary highlighted that risk in the agri-food sector can no longer be designated in silos throughout the value chain (e.g. risk designated to producers as seen in Figure 1). Rather, risk must now be understood and mitigated on a holistic systems level. Figure 2, from the CAPI summary *Barton Forward: Optimizing Growth*<sup>6</sup>, illustrates the global risk landscape in 2017. Of the risks that are most likely to occur, and having the largest impact, the agri-food sector is impacted by over half of them. Taking a systems approach to understanding risk allows better mitigation of that risk.

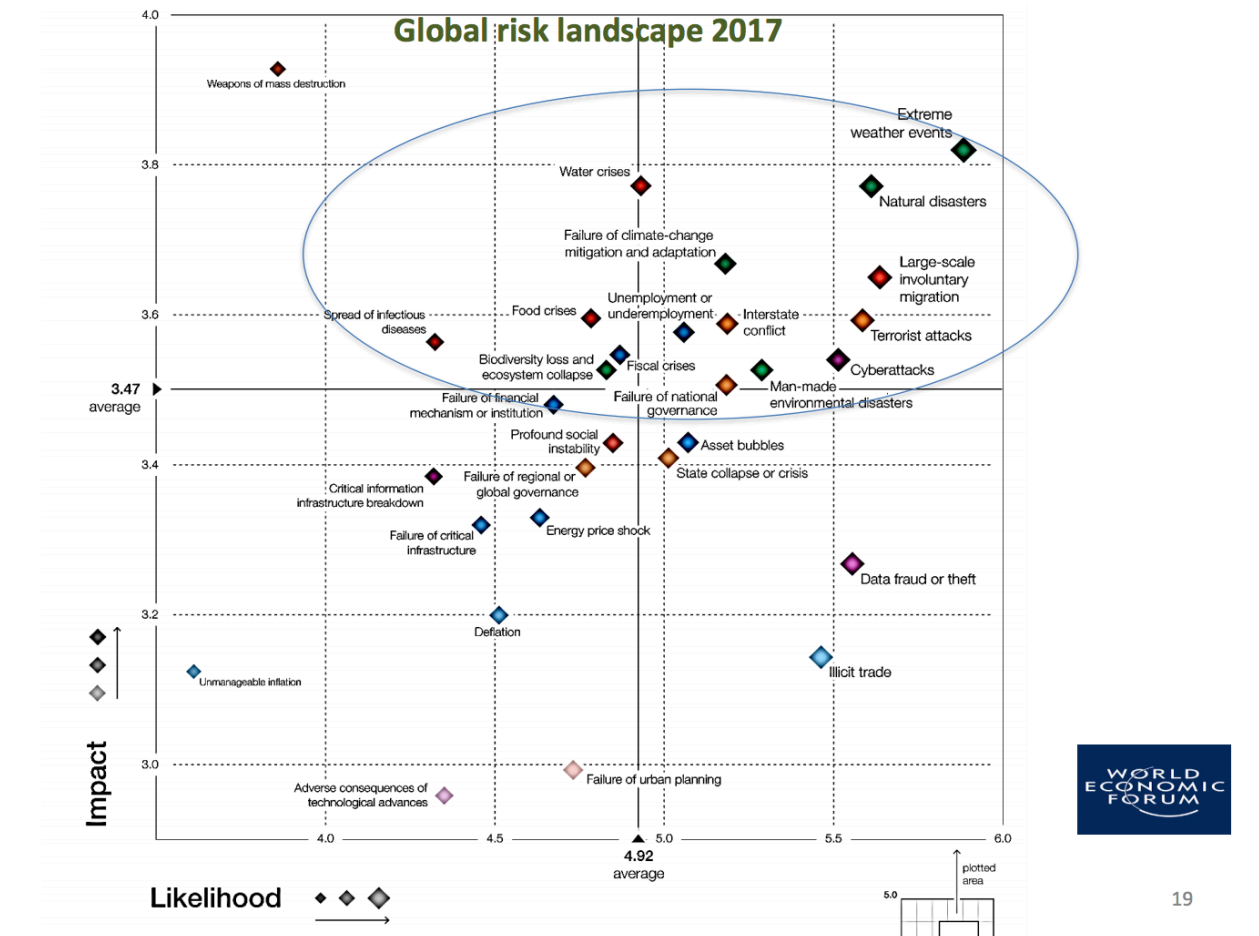
<sup>4</sup> KPMG International Cooperative. (February 2012). *Expect the Unexpected: Building business value in a changing world- Perceptions to sectoral risks and readiness to deal with them*.

<sup>5</sup> Advisory Council on Economic Growth. (February 6, 2017). *Unleashing the Growth of Potential Key Sectors*. Retrieved from <https://www.budget.gc.ca/aceg-ccce/pdf/key-sectors-secteurs-cles-eng.pdf>

<sup>6</sup> CAPI (December 11, 2017). *Barton Forward: Optimizing Growth- The Risks and Opportunities for Growth*. Retrieved from [http://www.capi-icpa.ca/pdfs/2017/Barton-Forward\\_Saskatoon\\_BilyeaCAPI.pdf](http://www.capi-icpa.ca/pdfs/2017/Barton-Forward_Saskatoon_BilyeaCAPI.pdf)



Figure 2. Global Risk Landscape 2017<sup>7</sup>



## The Importance of Animal Agriculture to the Canadian Economy

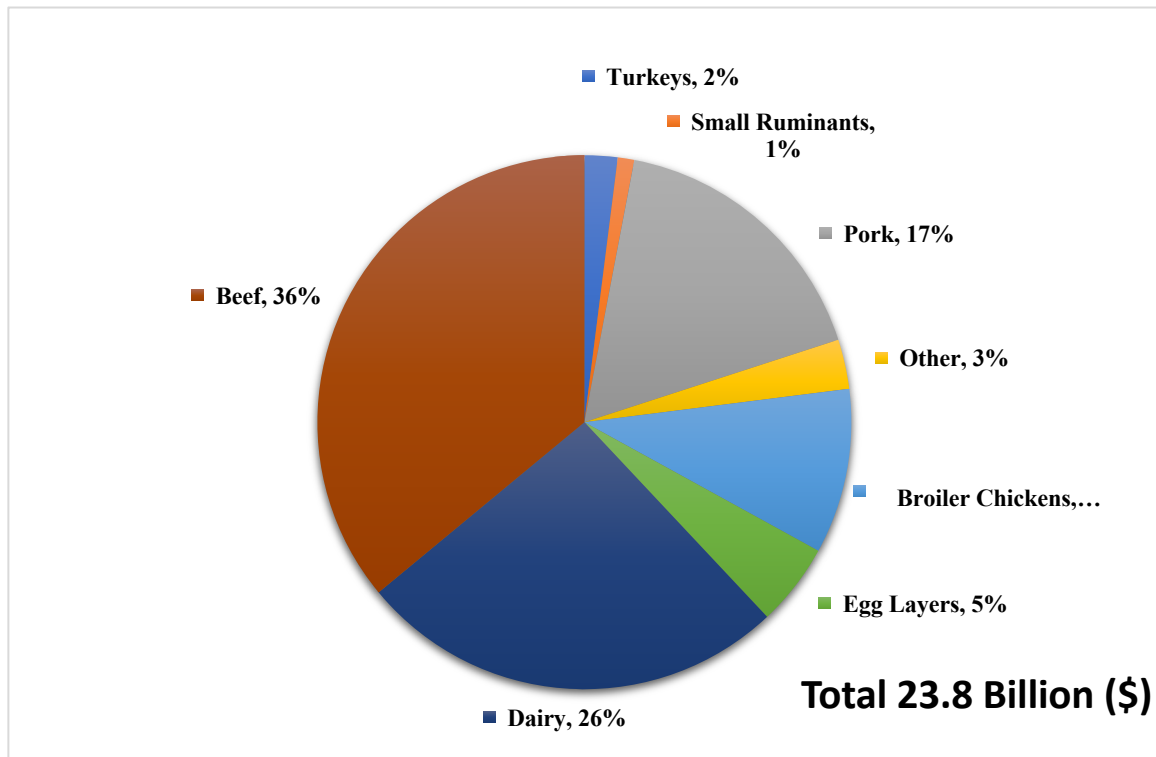
Animal agriculture is big business, a major source of employment, the primary source of high quality protein for Canadians and a key export to international consumers. The multiplier effect of agriculture can be seen in the beef industry in which every job in the sector yields another 3.6 jobs elsewhere in the economy. For example, the beef sector alone generates 228,811 jobs<sup>8</sup>. For every \$1 of income received by farm workers and owners, another \$2.08 is created elsewhere.

<sup>7</sup> CAPI. (December 11, 2017). *Barton Forward: Optimizing Growth- The Risks and Opportunities for Growth*. Retrieved from [http://www.capi-icpa.ca/pdfs/2017/Barton-Forward\\_Saskatoon\\_BilyeaCAPI.pdf](http://www.capi-icpa.ca/pdfs/2017/Barton-Forward_Saskatoon_BilyeaCAPI.pdf)

<sup>8</sup> Kulshreshtha, (2012). Retrieved from <http://www.cattle.ca/resources/industry-stats/>

The extent of the impact of the livestock sector can be better understood by examining Figure 3, where the Government of Canada's calculated receipt values of each livestock species, from 2016, is shown.

**Figure 3. 2016 Farm Receipts: Livestock \$23.8 Billion<sup>9</sup>**



## Drivers of Accelerating Change

Today, change is occurring at an accelerating pace and while human capacity to adapt to change is increasing, it is not increasing at the same rate that change is occurring<sup>10</sup>.

Three key drivers of change to be considered in the larger agri-food context are:

1. Globalization
2. Technology
3. Climate change

Understanding how these three key drivers interact with agricultural systems, and who they affect, is critical when considering risk mitigation.

<sup>9</sup>Statistics Canada. (2016). Farm Cash Receipts. \*Data Selected (under add/remove data tab): Specific species shown in Figure 3. Retrieved from <http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=0020001&tabMode=dataTable&p1=-1&p2=9&srchLan=-1>

<sup>10</sup> Friedman, Thomas L (2016): Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Acceleration. Farran & Giroux. 496 pp.

## 1. Globalization

In today's society, both positive and negative information, can move globally and have drastic impacts within 24 hours. At the touch of their fingers customers have access to information on products. Considering that Canada is the fifth largest exporter of agriculture and agri-food products globally<sup>11</sup> (with much of it being bulk commodity – wheat, pulses, canola, live animals, etc.), the potential impact of free flowing and easy access information on Canada's agriculture and agri-food sector are immense.


**The world is your opportunity, but also your competition.**

Prices for most commodities, except supply management, are set globally. For a handful of commodities (e.g. canola), Canada's primary production can affect global pricing. Exporting countries, like Canada, must consider their approach to production and export of their products, including whether the goal of being the lowest priced producer is realistic or advantageous. As one of the world's largest agricultural exporters, Canada's labour costs, energy costs and social safeguards prevent it from being a lowest priced producer. This, in fact, is something to take pride in. Canada should continue to focus on providing the best value to customers. Consistency, quality, safety of supply, transparency and trust allow our products to be preferred.

## 2. Technology

Creation and implementation of new technologies is nothing short of disruptive. Genetic manipulation and the ability to pre-determine the sex of chicks while in the egg, are examples of new technologies that have had huge impacts on the poultry industry. As with other drivers of change, new technologies represent both opportunity and risk. One such opportunity lies in existing large data sets that have the ability to inform and improve decision making and profitability.

The most significant effect of technology on livestock and poultry production may be the ability to capture vast amounts of data. Still unclear, is how this data can be shared, analyzed and used to its full benefit. Sharing of data is the focus of several existing initiatives including Canadian Precision Agri-Food (CPAF) (Appendix C: Canadian Precision Agri-Food (CPAF)). More broadly, agricultural data, including that related to financial



A diagram illustrating a blockchain network. It features a central globe with a grid of nodes connected by lines, representing a decentralized ledger. The word "BLOCKCHAIN" is written in blue capital letters below the globe.

**“The blockchain was developed as a decentralized ledger which records transactions and stores this information in a global network which prevents it from being changed at a future date.”**

Sean Crossey,  
New Food April 2017

<sup>11</sup> Agriculture and Agri-Food Canada. (2016). Retrieved from <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/an-overview-of-the-canadian-agriculture-and-agri-food-system-2016/?id=1462288050282>

transactions may evolve to use blockchain. Many sectors in Canadian agriculture will require a concerted data collection effort and/or a significant shift in mindset regarding sharing before any effective data sharing potential can be realized.

Amalgamated data will be critical to governments as they develop risk management policies and programs. Governments will need to work with industry to enable easy data capture, maintain confidentiality of individual businesses and aggregate data for the benefit of all parties.

Current practical examples of using data to mitigate risk include:

#### **Mitigating Catastrophic Crop Loss**

**During a year of severe drought, farmer and founder of Deveron UAE (a field imagery/drone company) decided to change his management strategy based on the drone imagery. There were clearly differentiated zones of extremely poor crop performance and zones where corn yields still had hope. Rather than broadcasting fertilizer over the whole field, no additional fertilizer was added to the poorest crop performance areas while more was added to the higher performance areas. This saved approximately \$110/acre and increased yield. The outcome was a much lower crop insurance claim.**

#### **Capturing On-Farm Data to Meet Consumer Expectations**

**VG Meats ([www.vgmeats.ca](http://www.vgmeats.ca)) is a leader in understanding and doing everything possible to meet consumer demand. They have been early adopters of many technologies and are the only processor that tests every beef carcass for tenderness, a direct reflection of consumer demand. They use Go360 bioTrack to collect information on their cattle. This focus on information carries on into their processing plant where they use bioLinks to maintain identity of carcass down to every individual retail offering of meat. They can look back through to birth on each eating experience of their product as well as limiting the scope of any possible recall and share valuable carcass data with their farmer suppliers.**

### **3. Climate Change**

As with globalization and technology, climate change represents both opportunity and risk. Temperature increases have allowed farmers in Ontario to grow crop varieties (e.g., corn) with higher yields. Climate also presents risk as it has increased the probability of wide spread weather extremes (e.g., drought, hail, floods).

Not only has climate change affected the environment and thereby growing conditions, but it has influenced societal demands and thereby public policy while creating new market opportunities. For example, climate change and associated concern regarding greenhouse gases, has led to public mandates and support for ethanol. Currently 39% of Ontario corn that is sold off farm is

used in ethanol production. This use is now a major competitor for feed corn to the livestock and poultry industries.

In 2017 the province of Ontario proposed a doubling of the ethanol blend in fuel from 5% to 10%<sup>12</sup>. This will significantly increase corn demand. This interaction between ethanol production and animal/ poultry feed affecting corn demand and price demonstrates why we must think beyond value-chains to food/energy systems that intersect with one another.

## Thinking Forward

In Canada, several organizations are exploring and addressing risk within agriculture, with particular attention on agricultural risk as it relates to public perceptions and public policy. For example, in April 2017, the Canadian Agri-Food Policy Institute held a public policy forum “Canada as an Agri-Food Powerhouse”<sup>13</sup>. The focus was “strengthening our competitiveness, leveraging our potential”.

Key directions from that forum included:

- bolster public trust in the **Canadian food brand**
- attract much needed investment in innovation which necessitates improved alignment and **modernization of regulations**
- focus on both **export and domestic growth**
- the **time to act is now**
- continually work to **minimize impact on natural capital** (i.e. soil, water, biodiversity)

Likewise, in February 2017, the Advisory Council on Economic Growth published its second report “Unleashing the Growth Potential of Key Sectors.”<sup>14</sup> This report identified agri-food as one of industries in which Canada has the most potential for growth in global markets.

Some key considerations were:

1. Canada’s agri-food sector has huge natural endowments (i.e. land, water)
2. We are seen globally as **trusted in food safety** and crop yields
3. There are **strong research clusters** in Canada
4. A large emerging middle class is creating **demand for higher value trusted food**
5. There are global constraints on land, water and carbon emissions.

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<sup>12</sup> Alberta Farmer. (January 3, 2018). *Ontario Proposal Aims to Double Ethanol Blend in Fuel*. Retrieved from <https://www.albertafarmexpress.ca/daily/ontario-looks-to-double-ethanol-blend-in-fuel-boosting-corn-demand>

<sup>13</sup> Canadian Agri-Food Policy Institute. (April 2017). *Canada as an Agri-Food Powerhouse, Strengthening our Competitiveness and Leveraging our Potential; Roundtable Synthesis Report*. Retrieved from [http://capi-icpa.ca/pdfs/2017/PPF-CAPI\\_Agri-Food\\_Powerhouse.pdf](http://capi-icpa.ca/pdfs/2017/PPF-CAPI_Agri-Food_Powerhouse.pdf)

<sup>14</sup> Government of Canada, Advisory Council on Economic Growth “Unleashing the Growth Potential of Key Sectors”. (Feb 6, 2017). Retrieved from <https://www.budget.gc.ca/aceg-ccce/pdf/key-sectors-secteurs-cles-eng.pdf>

The Council indicated that we must move up the value chain as Canada processes only 50% of our agricultural exports and that increasing our productivity will require economies of scale, and a **common analytics platform**. The Council also highlighted that government funding of risk management of agriculture flows largely to farmers to smooth volatility and manage risk.

## Securing and Retaining Public Trust Domestically and Internationally

In the agri-food sector, trust is built on consistency of product quality and documented evidence of safety and sustainability. Trust, like a reputation, is built over years and can be lost in a moment.

**Trust must be earned  
and is a matter of:**

*Say what you do.  
Do what you say.  
Prove it.*

Farmers and their associations in Canada have taken a leadership role in building public trust, particularly in environmental areas. Examples include the wide spread acceptance and participation by farmers in programs like the Environmental Farm Plan and pesticide training courses. These programs are primarily of an educational nature and involve self-assessment. However, this is increasingly only part of what is required to gain trust.

Today, large retailers and processors are defining new ways of ensuring of trust<sup>15</sup>, centered around “sustainability”. This has largely been the result of consumers determining through their purchasing power, what constitutes trust in the food they eat. Consumers have dictated a shift from “farm to fork” to “fork to farm”. With more retailers and producers marketing their practices, it becomes more important for farmers to capture data and document practices.

One of the largest global standards for measuring and verifying sustainability practices is the Sustainable Agriculture Initiative (SAI)<sup>16</sup>. Through their Farm Sustainability Assessment (FSA), SAI examines practices in relation to the environment; working conditions; community involvement; farmers’ financial capabilities; food safety on farm; animal welfare; etc. SAI membership includes the likes of McDonalds, Unilever, Pepsico, McCain’s, Nestle and Cargill, all of whom must ensure their products meet consumer demand. More information on SAI Platform can be found in Appendix D: SAI Platform and FSA 2.0.

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<sup>15</sup> Walmart. (April 19, 2017). Walmart Launches Project Gigaton to Reduce Emissions in Company’s Supply Chain. Retrieved from <http://news.walmart.com/2017/04/19/walmart>

<sup>16</sup> [www.saipatform.org](http://www.saipatform.org).

## Demonstrated Sustainability in Canada

In Canada, efforts have been made throughout the agri-food system to address sustainable production. Producers, for most species however, do not have the data to independently verify what has been done on the farm, nor does Canada have a central system to document how agriculture is performing on a whole farm basis rather than on individual products.

In response to the demand from retail that processors source their agricultural inputs from “sustainable sources”, processors created the Provision Coalition<sup>17</sup>. Provision Coalition is a national organization that ensures their member processors are sustainable and that their raw materials come from “sustainable suppliers”. Primary agriculture has also responded to demand for documentation of sustainable production by developing programs on a species by species basis (e.g., Dairy ProAction<sup>18</sup>, Verified Beef Production Plus<sup>19</sup>).

A key question that all in the food system must agree upon is: **“What does Canada stand for as a nation relative to sustainable food production?”**. Currently, Canadian agriculture defines sustainability on a commodity by commodity basis, with no common standard that is recognized globally. Retailers do not want a multitude of “sustainability” programs, as it creates consumer confusion and expensive tracking. They would prefer a common “whole farm” assessment.

To this end, an Ontario alliance was formed to develop an agreed upon methodology to ensure an acceptable process for both processors and farmers. The Sustainable Farm and Food Initiative (SFFI<sup>20</sup>) has the goal of developing a single whole farm, whole value-chain approach to sustainability while recognizing and giving credit to farmers for what they have already done regarding sustainability. As part of the SFFI On-Farm Proof-of-Concept project<sup>21</sup>, AgSights and Groupe AgEco partnered to provide a user-friendly, mobile data collection system. Scoring was embedded in the program so that participants in the project could immediately see how they scored. This scoring enabled the program to generate an action plan for improvement for participants. Moving forward, SFFI will shift from being provincial to being national and will be known as the Canadian Agricultural Sustainability Initiative (CASI). It will be co-managed by the Canadian Federation of Agriculture and Provision Coalition. More information on SFFI/ CASI can be found in Appendix E: The Sustainable Farm and Food Initiative.

An excellent example of establishing a national brand is Ireland’s Origin Green ([www.origingreen.ie](http://www.origingreen.ie)). Canada has a similar initiative started ([www.brandcanada.agr.gc.ca](http://www.brandcanada.agr.gc.ca)) but it lacks cohesion. Currently, over seven hundred Canadian agri-food businesses and associations

What does **Canada stand for as a nation** relative to sustainable food production?



<sup>17</sup> [www.provisioncoalition.com](http://www.provisioncoalition.com)

<sup>18</sup> [www.dairyfarmers.ca/proaction](http://www.dairyfarmers.ca/proaction)

<sup>19</sup> [www.crsb.ca](http://www.crsb.ca)

<sup>20</sup> [www.sustainablefarms.ca](http://www.sustainablefarms.ca)

<sup>21</sup> SFFI. (December 2017). Sustainable Farm and Food Initiative Final Report. Retrieved from <https://static1.squarespace.com/static/5a4fc47f1f318d07aef77163/t/5a539e7b652dea1af958a1b3/1515429505021/SFFI+Final+Report+-+January+3+2018.pdf>

participate in this program. The CASI initiative would support the Canada Brand program, by providing proof of sustainable Canadian production.

## The AgriRisk Study

### Methodology:

This study included sampling from Alberta, Saskatchewan, Ontario and Quebec. Interviews were held in February and March 2018. The species/stages of production included in the study included:

Beef; Broiler chickens; Egg layers; Dairy cattle; Dairy goats; Pork; Sheep; Turkeys; Veal

In addition, the following groups were included:

- Processors – independent provincial and international
- Distribution – independent farm retail and national grocery chain
- Retail - national
- Advocacy – provincial and national
- Regulatory – federal and provincial government

The process of collecting the knowledge, insights and perspectives was completed primarily by face to face interviews (Interviewees = 35). In addition, two focus groups (Focus group participants = 14) were conducted. All interviews were conducted by the principal investigator to reduce variability in filtering responses of interview candidates and consistency in the questioning process. Interviews lasted 45 to 90 minutes.

The demographics of the candidates interviewed from the producer groups were:

- a) both genders;
- b) range of age 33 – 72 years;
- c) all are accountable for primary production on their farm/ranch;
- d) all possess post-secondary education;
- e) in the majority of cases they held a role with a provincial and or national producer association;
- f) candidates from the beef, dairy, egg and pork producers also had years of experience in a director/shareholder role with a processor.

Participant's individual identities remain confidential. The willingness of candidates invited to participate in the interviews and focus groups was very good.

The questionnaire used in the interviews and focus groups is available in Appendix F: AgriRisk Project Questionnaire. All participants were asked to identify four issues associated with risk management. When asking for a fifth, participants were prompted based on a list of potential risks that came from the first focus group:



- 1) Farm Management
- 2) Disease/Pest/Productivity
- 3) Government Policy
- 4) Market Access
- 5) Financial Institutions
- 6) Technology
- 7) Consumer wants/needs
- 8) Packers/Processors
- 9) Distribution Channel
- 10) Environment



For greater clarity, each of the risk categories was broken into elements. These are indicative of comments made in the interview process. Table 1 illustrates the elements associated with each category identified in the report.

**Table 1. Elements of the Categories of Risk**

Category of Risk	Elements
Farm Management	<ul style="list-style-type: none"> <li>i) Access to labour</li> <li>ii) Animal welfare</li> <li>iii) Feed quality</li> <li>iv) Food literacy</li> <li>v) Food safety</li> <li>vi) Key person insurance</li> <li>vii) Positive cash flow</li> <li>viii) Presence of a business plan</li> <li>ix) Production literacy</li> <li>x) Producer organization with defined mission, vision, finances</li> <li>xi) Producers prepared to lead strategy for their species sector and across species sectors</li> <li>xii) Soil quality</li> <li>xiii) Succession plan</li> <li>xiv) Succession planning for future farm leaders</li> <li>xv) Water quality</li> </ul>
Disease/ Pest/ Productivity	<ul style="list-style-type: none"> <li>i) ADG, FE, yield/grade</li> <li>ii) Bacterial sensitivity to anti-infectives</li> <li>iii) Current viral infectious agents</li> <li>iv) Marbling, meat quality, tenderness</li> <li>v) New variants of viral infectious agents</li> <li>vi) Pain management practices</li> <li>vii) Parasites</li> </ul>

	<ul style="list-style-type: none"> <li>viii) Prudent use of anti-infectives</li> <li>ix) Reportable diseases</li> </ul>
Government Policy	<ul style="list-style-type: none"> <li>i) Approval process, accountability for timely review, cost recovery for drugs and vaccines</li> <li>ii) Approval process, accountability for timely review, cost recovery for genetics and traits</li> <li>iii) Burdensome paperwork for approvals, grants</li> <li>iv) Canada Food Guide recommendations</li> <li>v) Establishment of phytosanitary standards</li> <li>vi) Exchange rate</li> <li>vii) Farm and business tax law</li> <li>viii) Farmers right to farm – land access and farm building codes</li> <li>ix) Foreign trade initiatives and signing deals</li> <li>x) Insurance programs and financial support for price stabilization</li> <li>xi) Interest rate</li> <li>xii) Product labeling</li> <li>xiii) Provincial and interprovincial trade Supply Management programs</li> </ul>
Market Access	<ul style="list-style-type: none"> <li>i) Access to CPTPP, CETA, MERCUSUR</li> <li>ii) Animal housing standards</li> <li>iii) Food fraud</li> <li>iv) Food safety</li> <li>v) Maintenance of NAFTA</li> <li>vi) Phytosanitary standards</li> <li>vii) Tariffs</li> <li>viii) Traceability</li> <li>ix) Trade barriers such as beta-agonists, productivity implants, non-science-based rationale to refuse access</li> <li>x) Veterinary authorization</li> <li>xi) WHO - OIE timely response to challenges from foreign countries</li> </ul>
Environment	<ul style="list-style-type: none"> <li>i) Drought</li> <li>ii) Earth quakes</li> <li>iii) Extremes in both heat/humidity and cold</li> <li>iv) Flood</li> <li>v) Gas/oil spills</li> <li>vi) Manure management</li> <li>vii) Prairie and forest fires</li> <li>viii) Water rights</li> </ul>
Packer/ Processor	<ul style="list-style-type: none"> <li>i) Animal transport</li> <li>ii) Consolidation</li> <li>iii) Euthanasia</li> </ul>

	<ul style="list-style-type: none"> <li>iv) Labour access – domestic and foreign</li> <li>v) Vertical integration</li> <li>vi) Import of raw materials for further processing in Canada</li> <li>vii) Phytosanitary standards</li> <li>viii) Price discovery</li> <li>ix) Profitability</li> </ul>
Distribution/ Retail	<ul style="list-style-type: none"> <li>i) Affordability of food for consumers</li> <li>ii) Backward integration</li> <li>iii) Communication links with producers</li> <li>iv) Consolidation</li> <li>v) Profitability</li> <li>vi) Trust and integrity of knowing where food comes from</li> <li>vii) Vertical integration</li> </ul>
Financial Institutions	<ul style="list-style-type: none"> <li>i) Business planning process for operation</li> <li>ii) Credit worthiness more than just land collateral</li> <li>iii) Hedging, contracting, puts</li> <li>iv) Interest rates</li> <li>v) Operations liquidity</li> </ul>
Consumer	<ul style="list-style-type: none"> <li>i) Activism – mis-information in social media</li> <li>ii) Consumer eating habits (e.g., home versus restaurant)</li> <li>iii) Consumer Food Guide Food fraud</li> <li>iv) Food literacy</li> <li>v) Food safety</li> <li>vi) “Free from”, RWA, organic, grass-fed, natural, local source</li> <li>vii) Millennials shopping and eating habits</li> <li>viii) New Canadian food preferences, new cuts or case ready</li> <li>ix) Obesity rates</li> <li>x) Production literacy</li> <li>xi) Trends in consumption of animal protein</li> <li>xii) Recommendations</li> </ul>
Technology	<ul style="list-style-type: none"> <li>i) Green energy from animal production to reduce carbon footprint</li> <li>ii) Non-animal-based protein production</li> <li>iii) Capital neutrality - small farms have equal access to technology as larger operations</li> <li>iv) Robotic milkers provide greater and more real time metrics of health and production parameters than DHI</li> <li>v) Robotics to replace unmet expensive labour requirements</li> </ul>

## Analysis

The first analysis involved aggregating all participant responses in order to report on the mix of issues ranked. The second analysis involved aggregating participant responses in order to report on the mix of issues ranked, depending on the species they were associated with. Analyses were also done on issues mentioned first, second, third, fourth and fifth across all groups and this data can be found in Appendix G: Frequency of 1st to 5th Mentions Across All Participants.

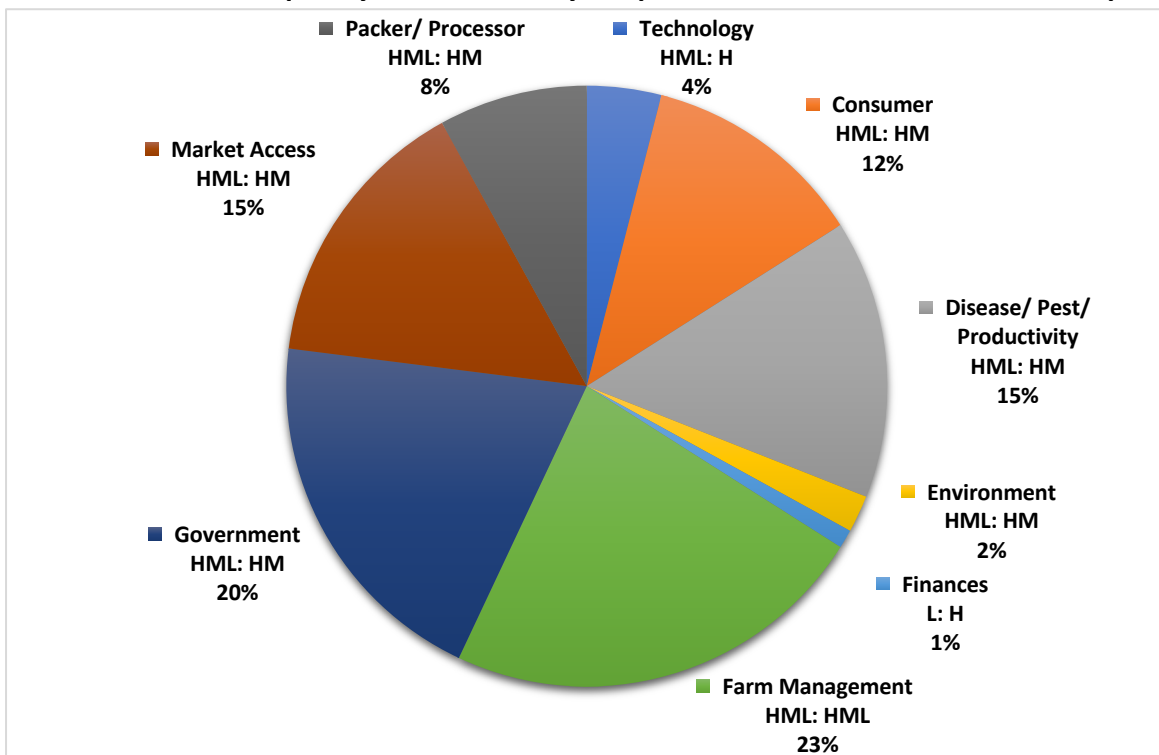
### A Note on Chart Labels

Risks were identified by name, followed by a double code of H (high), M (medium), L (low) assigned subjectively by participants in the study. The first letter indicates the stated *Probability* of the risk occurrence and the second letter indicates the stated *Impact* should the risk occur. When participants rated a factor differently, all ratings are captured with the order reported based on frequency of ratings. For example, Technology HML: H means that the probability of risk was rated H, M and L while the impact was rated H.

## Combined Specie Groups

### Risks Mentioned by Producers

Figure 4. Producers: Frequency and Probability/ Impact of all Risks Mentioned for All Species



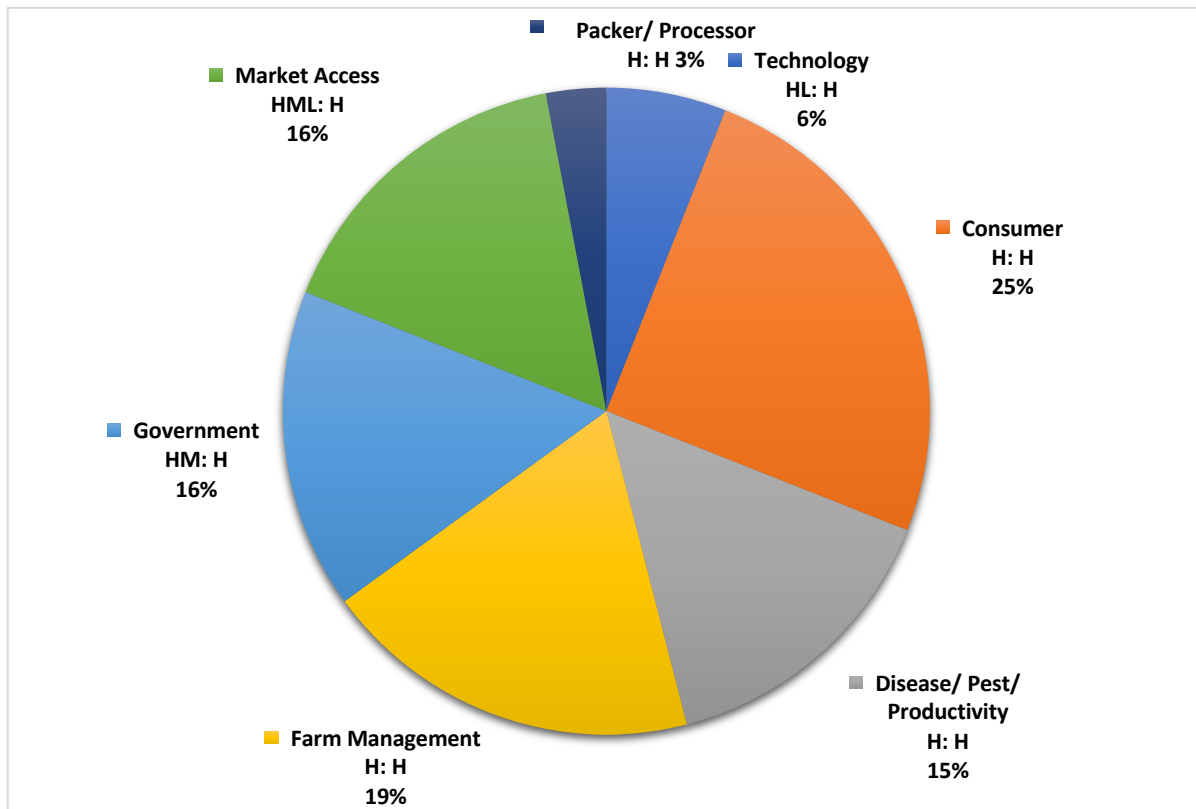
Producers participating in the study were quick to point out that previous generations of farmers produced commodities to feed consumers with only one problem, they were hungry. Today’s consumers make buying decisions on many more factors with trust being top of mind for many. This reflects the paradigm shift through which the consumer is driving change. The change is articulated and amplified by the marketers in the food retail sector as they aim to differentiate their brands and the eating experience of their customers. Producers, and in fact the entire agri-food system, needs to adjust to the new reality of ‘fork to farm’. In this new reality, consumers dictate preferences and producers must adjust production to meet these expectations or face the prospect of not being in business.

A common theme throughout the interviews, regardless of which livestock sector the participant was associated with, was trust and integrity of everyone involved in putting food on the consumers plate. The process requires predictability and transparency in every step.

Another common theme was the limitations created by having silos of communication between and even within species. Select species groups have, however, made real progress in building bridges with partners in the processing and distribution retail channels.

### First Mentioned Risks

**Figure 5. Frequency and Probability/ Impact of Issues First Mentioned by Combined Groups**



First mention issues (considered to be top of mind), as identified across producers, processors, food distribution/retail and advocacy groups, were:

- 1) Consumer trends
- 2) Farm Management
- 3) Tie: Government and Market Access

Some high-level comments on three of these risk categories follow below.

## **1. Consumer Trends**

The frequency of first mention by all groups for consumer trends was 25%.

### What is recognized as working in reducing risk?

Trust and integrity in the food system is identified as a business risk and no longer simply a ‘nice to do’. Systems that aid in establishing trust and integrity in the food system are becoming more essential and mandatory as the food system shifts from ‘farm to fork’ to ‘fork to farm’.

### What is recognized as not working?

The impact of misinformation, and lack of science-based education on human nutrition. The lack of critical thinking of society regarding food systems does not match the investment nor resources available to the industry.

### Why are the actions not working?

Silos of communication between livestock specie producers, processors and retailers, and federal, provincial, territorial, municipal regulators are serious and prevalent. The dilution of funding and lack of funding across the silos with an apparent lack of a coordinated strategy is not meeting the magnitude of the challenge.

### Recommendations

- ✓ Establish regular producer meetings that include all of the protein source providers coordinated by national/provincial/territorial advocacy groups to set objectives, milestones and measure progress with a focus on those producers that account for a significant percentage of production. Livestock producers with trade associations are invited. Industry trade channel partners are invited to participate when the subject matter is relevant. Focus would be on supply chain collaboration for communication and funding with new models to move collaboration into meaningful investments of human and financial resources. The intent is to focus the discussion on parties that can solve challenges as the agenda moves forward and not fill everyone’s calendar. Government/regulatory authorities are invited to participate on an as-need basis; however, since government is involved in almost every stage and

process, their absence in collaboration teams will be infrequent. The industry needs to drive the process with technical and financial support from the public sector.

- ✓ Increase agriculture in the classroom, with curriculum generated by the producer and advocacy groups. The curriculum should be aligned with the science program. Given that fake news travels 20 times faster than truth<sup>22</sup> a concerted and well-financed monitoring of social media and timely response is required. With new technology it may be possible to be predictive and deal with issues proactively rather than reactively.
- ✓ Animal welfare must remain a top issue. Producers are acutely aware that one case of animal welfare in one species in one part of the country would have negative consequences in other species; in other regions; and on our brand internationally.

## **2. Farm Management**

Farm management is a broad category, covering an array of types of risks, including food safety, animal welfare, succession planning, etc. It ranks in the top two mentioned categories from the first to the fifth most frequently noted risk category. The frequency of first mention of all groups for farm management was 19%.

### What is recognized as working in reducing risk?

AgriRisk, AgriRecovery, AgriStability and a number of livestock specific insurance programs (CPIP) and provincial programs (ASRA) are currently in place. In addition, a full array of risk mitigation insurance programs is available for crops. Producers consistently recognized the support from the federal, provincial and territory governments (FPT).

Access to capital for livestock producers tends to mirror profitability of livestock sectors and cycles. Current profitability in the livestock sector has resulted in financial issues being voiced only by young farmers in the small ruminant category.

The addition of six locations with off-loading facilities for unit trains in the prairie provinces was reported as a positive change enabling access to corn rather than sole reliance on feed wheat and barley.

The participants recognize that producer associations have adapted their mandate from the original marketing collective for a commodity to a much broader scope of accountabilities including consumer advocacy, government lobbying, setting quality assurance standards and self-regulation for food safety and animal welfare. The attitude of the producers was positive,

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<sup>22</sup> Hern, A. (March 8, 2018). Scientists prove that the truth is no match for fiction on Twitter. Retrieved from <https://www.theguardian.com/technology/2018/mar/08/scientists-truth-fiction-twitter-bots>

with pride in their collective accomplishments and very progressive thinking of issues and marketing opportunities beyond what happens in their barn.

### What is recognized as not working?

Farm governance as an element of farm management issues was raised in the context of intergenerational transfer of the business operations. Operators have access to professional services, equally in all species, from private accountants to public services supported by provincial initiatives. Across species the issue of impact of proposed tax changes on small and medium businesses was a consistent concern.

While the producers were very upbeat about their role in producing high value protein for Canadians and their export customers, there was a sharp sense of the need for producers to collaborate with their partners in the system of delivering safe and wholesome food. Specifically, they articulated the need for leadership training and communication skills for the next generation of farmers.

Record keeping, aside from expenses and tax liability, as a routine business practice is not the norm. Studies show that only about 25% of Canadian producers have a business plan. Success in record keeping is measured by having an environmental farm plan, successful navigation of burdensome paperwork for government required grants, program applications and license renewals.

One aspect of production that was highlighted as a need to address is the transportation of livestock. A general concern was expressed that as stewards of animal welfare and biosecurity, improvements must be made in the transportation and documentation of practices associated with the movement of all livestock.

An area needing improvement is access to farm help, in particular foreign labour. This is a growing concern as the livestock sectors continue to consolidate and grow in herd/flock size.

Insufficient continuing education on human resource laws, understanding of the transition and successful granting of landed immigrant status for the farm labourers and training in good management skills.

Progress in marketing and product diversification is growing slowly and appears to be linked closely with intergenerational changes as younger producers adopt new technology. In part, changes are emerging as a response to consumers quest for locally sourced foods.

### Why are the actions not working?

Steady progress is being made in farm management. The need for continuing education on a formal basis along with peer group panels will facilitate the education process.



## Recommendations

- ✓ Producer attitudes and behaviours tend to cluster in four groups: a) planners, b) developers, c) strugglers, d) sunsetters/sceptics. Investment of resources in people and in capital should be aligned in decreasing order of magnitude with the first three groups.
- ✓ A collaborative approach with all specie producers in conjunction with FPT taxation authorities to clarify and initiate constructive changes in intergenerational asset transfer and taxation law.
- ✓ A similar collaborative approach with the FPT responsible for immigration and labour to streamline and reduce red tape in accessing skilled foreign labour. Processors should be included in the discussion.
- ✓ If business management courses and data analytics are not part of the core curriculum for agriculture students at colleges and universities, they need to be developed and incorporated in the curriculum. Continuing education courses and certification for farm business leadership should be supported with public funding via the advocacy and farm support organizations and not-for-profits (e.g., 4-H Canada).
- ✓ Livestock groups should collaborate on the updating of transportation equipment and process documentation for animal welfare and biosecurity.
- ✓ A forum for collaboration (producer – processor – retailer) should be developed to better respond to consumer interest and willingness to pay for local food. Food retailers are seeking local producers to partner within the evolving market place. It is this intersect where record keeping, and traceability has the highest probability of return and therefore adoption.

### **3. Government Policy**

The frequency of first mention of all groups for government policy was 16%.

#### What is recognized as working in reducing risk?

AgriRisk, AgriRecovery, AgriStability and other insurance programs such as CPIP and ASRA are in place; however, there is debate among producer groups about how well they work. In addition, a full array of risk mitigation insurance programs is available for crops. Producers consistently recognized the support from the federal, provincial and territory governments (FPT) as a historical and ongoing safety net.

The Canadian Agricultural Partnership programs that focus on accelerating the pace of innovation are recognized and well received.

AAFC's Sector Science Strategies are contributing to the sectors resiliency especially associated with animal health.

An initiative involving ACFA, CFIA and CVMA, targets the creation of geographic zones in Canada to be utilized in the event of foreign disease. Having such zones recognized by the OIE for reportable diseases in 2019 is one of the more critical objectives and would arguably be highly effective in reducing and managing risk. The economic consequences of not having such

zones was demonstrated through the beef industry in 2003 with BSE. Despite the risk mitigation that geographic zones could provide, and the acknowledgement of the huge losses due to BSE noted by the beef, poultry and pork sectors, industry and government have not been accountable for a timely resolution of the creation of geographic zones in Canada.

NAFTA is uniformly recognized as a central pillar to the integration of Canada, Mexico and USA agriculture, agri-food and processed food industries. Renegotiation with the new USA administration is concerning; however, there is confidence that the Canadian negotiating team coupled with pragmatic industry involvement will create a new and improved Agreement.

### What is recognized as not working?

The CFIA's handling of the Brooks, AB *E. coli* contamination drew negative comments across livestock species. The observation was that CFIA uses antiquated systems and is so centralized in decision making that paralysis results at the field level (not because the field level staff are unqualified nor incapable to find solutions). Similarly, recommendations for the Safe Foods for Canadians Act, following the listeriosis outbreak in 2008 where 23 citizens lost their lives, were not made until 2015. Now in 2018, ten years after the incident, the recommended actions are still not fully implemented. Those participants in the processing and distribution channel raised concerns that the rigour of inspection and documentation for Canadian consumption should be equally applied to imports.

CFIA and Health Canada are challenged to retool their regulatory process in light of the acceleration in technology in food safety and veterinary medicines. For example, new more sensitive tests for bacteria require new evaluation processes. CFIA are stuck using old evaluation processes.

CFIA's review and approval process for plant genetic advancement was criticized as negatively affecting the western Canada barley growers. New strains of barley could be approved that would directly affect the prairie economy for livestock feeds. Improved barley yields would make barley more competitive to imported US corn.

Health Canada's Veterinary Authorization legislation concerning the use and access of antimicrobials in veterinary medicine is falling seriously behind in defining roles and responsibilities as the regulations cascade to the provincial counterparts resulting in confusion and a general lack of leadership. Producer associations, attempting to be proactive are implementing guidelines that ban the use of Category 1, 2 and 3 drugs so that products bearing a preventative claim cannot be used to prevent diseases endemic in production practice. One of the unintended consequences is the creation of an animal welfare issue and potential food safety risk. Science-based decision making must trump political correctness.

Health Canada's updated cost recovery regulations will result in fewer new product registrations when innovation in veterinary medicines is most critical. Based on the fee structure for cost

recovery which is modelled after a human health rate schedule, approximately 80% of the medicines for animals currently marketed would not justify registration fees due to small sales volumes. Fees are part of the issue, and accountability for timely review is a linked factor.

Beef, Pork, Poultry and Sheep Value Chain Roundtables were not recognized as delivering meaningful and timely results.

The shift in funding for the federally-funded superclusters in Innovation, towards protein from non-animal-based sources, is viewed as a signal that innovation investment in the animal-based proteins has lost the competition for resources.

Proposed changes to Canada's Food Guide to incorporate more plant-based proteins come at the expense of dairy and meat. The revisions need to be science based.

The province of Ontario has implemented policy and regulations without due consultation in considering the risk and collateral damage to the economy and jobs. Current electricity rates in Ontario are 2.5 times higher than other jurisdictions in North America where livestock harvest plants are located. The effect of significantly higher energy rates affects all sectors of animal agriculture in the province resulting in lost ability to compete both provincially and internationally. Recent changes in the minimum wage legislation included an allotment of personal emergency days which has resulted in up to 10% of the staff taking the same day off.

Local governments also bear responsibility for equitable fees across sectors. In Guelph ON, a multi-national water bottler has access to water at rates far below market value whereas a food processor pays municipal rates for water. The water rates are 4 times higher than other jurisdictions in North America.

Federal regulations for foreign workers drew attention across all sectors of the animal industry as labour availability continues to be a major risk to many production and processing businesses. Consolidation of farms will increase, and these larger farms will require more skilled labour which, given the current working desires of Canadians, will require more foreign labour.

The efforts of government in developing traceability programs is recognized as good in theory. There is no shortage of software to capture and analyze the data. The willingness to adopt record keeping, and the skill to analyze the data is, however, a serious gap. From the perspective of most of ruminant production, adoption is very weak and consistently viewed as a waste of resources as traceability is neither complete, functional nor integrated across the food system. The poultry, dairy and pork industries have made significant progress in data capture and use of the data to support the transparency of where food comes from.

Producers commented on the application process for Growing Forward 2, particularly the burdensome paperwork, changing eligibility or access to funds, and general frustration with both process and outcome.

Canada Revenue Services approach to taxation of farm, and succession planning in particular, needs improvement.

Concern regarding succession planning is based on quickly and dramatically changing demographics. For example, from 1991 to 2011, the number of dairy producers and dairy farms decreased by 48.9% and 61.9%, respectively. Furthermore, this trend in consolidation is likely to continue; nearly half (45.8%) of all dairy producers in Canada were over 50 years of age in 2011<sup>23</sup>. Not only will most of these producers be retired by 2021, but younger producers will also exit the industry for other reasons. Similar shifts are in play in other sectors as well. Retaining the skills and knowledge of animal agriculture during the intergenerational transfer of assets is critical for a healthy livestock sector.

Concern regarding water conservation and water use for all sectors of Canadian society was of particular note to those participants living in the Great Lakes and St. Lawrence basin. These specific concerns were with regard to how Canadian regulators were proactively addressing unpredictability of our neighbours to the south in environmental and ‘America first’ policies.

#### Why are the actions not working?

Several participants commented on the role of government which are echoed by the 2015 Regulatory Sub-Committee Report to the Value Chain Roundtables All Chairs Committee. This report articulated five Themes.

##### Theme A:

It is crucial for those in the agriculture, agri-food and agri-based products sector submitting products and technologies for pre-market evaluation and approval to have access to science-based regulatory assessment processes that are predictable and transparent. It is equally important to have strong communication between applicants and regulators, as applicants need to know when they can expect a final decision on their application and when during the review process they may be called upon to respond to questions. Looking ahead, a greater number of new and innovative products are expected to emerge due to the accelerating pace of technological change. This influx of new products could increase demands on regulators and their capacity to assess new products and processes, possibly putting a strain on Canada’s regulatory capacity going forward.

##### Theme B:

Certain areas of regulation, such as the environment, fall under the regulatory oversight of three levels of government (i.e., municipal, provincial and federal). A lack of regulatory alignment and coordination between multiple levels of government, for example, when something is deemed

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<sup>23</sup> Jelinski, M., Kennedy, R., & J. Campbell. (2015). *Demographics of the Canadian cow-calf Industry for the Period of 1991-2011*. The Canadian Veterinary Journal. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4298269/>

necessary in one jurisdiction and not in another, may result in perceived duplication or conflict when these multiple levels of government appear to be regulating the same thing. This can lead to significant confusion and additional cost, which can be burdensome and overwhelming for businesses. This lack of alignment can also contribute to competitive imbalances between regions and provinces (e.g., waste water, particulate emissions). Furthermore, it can hinder competitiveness and discourage investments.

#### Theme C:

Inconsistent application and enforcement of regulations by inspectors can cost industry time, money and lost productivity while resulting in inefficient use of limited public sector resources. It can also result in a competitive disadvantage for domestic versus imported products and deter investment.

#### Theme D:

The multitude of public and private standards that Canadian firms must meet to satisfy buyers along the value chain (which can span environment, food safety, traceability, animal welfare or any other market-driven attribute/consumer value claim) can be cumbersome due to potential overlaps and multiple audit systems.

#### Theme E:

Incorporation by reference (IbR) is a broadly applicable tool to help increase the speed by which regulatory changes can be made. However, some stakeholders are uncertain as to when and for which regulatory purposes IbR will be used, how the documents will be scientifically validated and what associated impacts this will have.

#### Recommendations:

- ✓ Aggressive and bold negotiation for a renewed NAFTA that enables growth in all livestock, agri-food and agri-based products. Negotiations must not sacrifice one sector for the benefit of another sector within agriculture nor across industry sectors.
- ✓ Market access is critical: an incident of exotic disease in any of the livestock sectors would paralyze our economic engine. CFIA, in conjunction with Canadian Border Security Services, should review and increase biosecurity measures at all points of entry.
- ✓ Ensure the geographic zones for reportable animal disease are in place in 2019 and recognized by the global community.
- ✓ Implement the recommendations of the Regulatory Sub-Committee Report to the Value Chain Roundtable All Chairs and the Safe Food for Canadians Act.
- ✓ The revisions of the Canada's Food Guide must include science-based input from livestock producer associations and Dietitians of Canada before finalization.

- ✓ HC regulatory cost recovery program needs resizing to fit the animal health industry rather than the human health industry which is approximately thirty-five times larger in value and involves only one species.
- ✓ Federal foreign labour regulations should be reviewed with input from the appropriate industry sectors.
- ✓ Canada Revenue Agency evaluation and changes in succession planning taxation needs implementation in the immediate future as we are already in the transition of baby boomers.
- ✓ Water quality and conservation policies require a multi-departmental and FPT review to ensure sustainable access and use for all Canadians.
- ✓ Traceability, as the building block for ensuring trust and transparency in the food system might be best executed with a tax incentive, less paper work and high-profile motivation for farmers. Third party auditing with data security is the recommended next step.

## Risk Management by Species and Sector

Livestock producers identified Farm management, Government, Consumer, Market access and Disease/pest/productivity as the top five risks. Packer/processor, Technology, Environment and Finance were the least frequent issues of concern in risk management. Though limited by number of participants per species, it is noteworthy and troublesome to consider the very low emphasis given by non-supply-managed species to Consumer. Across species, the range of probability and impact of the risks were broad except for technology which scored high in both probability and impact. Given advances in ‘manufactured animal protein’, one would expect this topic to be of growing concern to all species groups in the very near future.

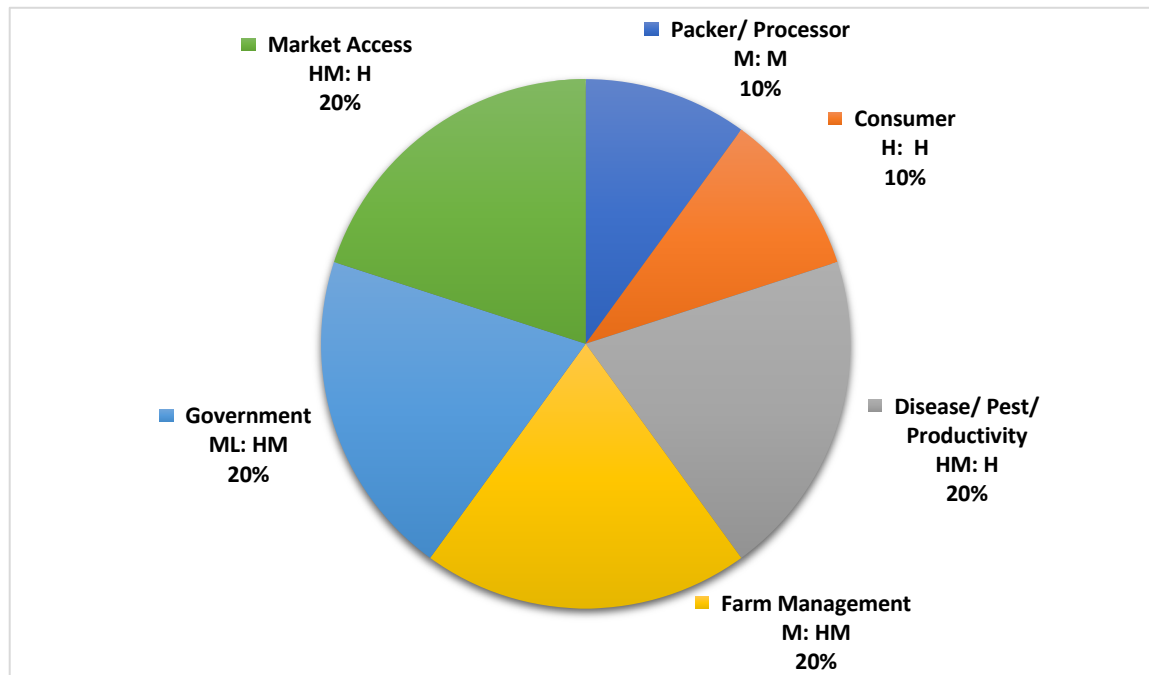
**Figure 6. Risks Identified by Species, Sectors and Amalgamations**

Sector	Farm Mgmt	Govt	Consumer	Market Access	Disease/Productivity	Packer/Processor	Tech	Environment	Finance
Pork (2)	20%	20%	10%	20%	20%	10%	0%	0%	0%
Poultry (3)	20%	20%	20%	13%	20%	0%	0%	7%	0%
Dairy (2)	10%	20%	20%	30%	0%	20%	0%	0%	0%
Beef (9 incl. 1 Academic)	23%	23%	11%	11%	11%	9%	7%	5%	0%
Small Ruminants (4)	25%	20%	0%	15%	20%	10%	0%	5%	5%
All producers/All species	23%	20%	12%	15%	15%	8%	4%	2%	1%
Processor/Retail (10)	24%	24%	14%	24%	9%	0%	0%	5%	0%
Advocacy (4)	30%	16%	8%	11%	13%	11%	8%	0%	3%
All groups/ All mention (34)	23%	19%	14%	14%	14%	8%	5%	2%	1%

# Pork

(N=2)

Figure 7. Frequency and Probability/ Impact of Issues Mentioned



Issue	Farm Management
What is working well?	<ol style="list-style-type: none"> <li>1) 75% of pork produced in Canada is exported.</li> <li>2) Positive cash flows with current feed and market prices.</li> <li>3) Access to quality pool of foreign labour.</li> <li>4) CQA is well adopted at the FPT level.</li> <li>5) Leadership development for the industry.</li> <li>6) Increased frequency of communication with processors/retail.</li> <li>7) Business planning is developing in step with succession planning.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Business planning is not the norm.</li> <li>2) Access to carcass data from processors.</li> <li>3) Processor consolidation. If a producer is not aligned with a processor there are limited options for price negotiation.</li> </ol>

Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Restricted flow of product information between producer and processor.</li> <li>2) Creating a business plan is a new skill for many producers, discomfort with writing documents and little immediate reward for the effort.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Workshops should be coordinated with the CPC or provincial association to enable farm planning processes and assist in creating a dialogue on issues management with the producers. It is recommended that the work on the humane transportation of pigs, currently in progress, continue.</li> <li>2) The process of accessing foreign labour and assisting the best of the skilled workforce in securing landed immigrant status should be streamlined.</li> <li>3) Determine the most critical information needed to be shared between producer and processor, and design templates and create secure access so analytics can be reported. This information should link with CQA for full visibility via a third party.</li> <li>4) Provide recommendations to retailers for accurate consumer labelling of the source and handling.</li> </ol>

Issue	Government
What is working well?	<ol style="list-style-type: none"> <li>1) Variety of FPT risk management programs available for livestock and crop insurance</li> <li>2) Renegotiation of trade agreements - NAFTA</li> <li>3) Negotiation of CPTPP</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Red tape for grant applications, permits, foreign labour approval process.</li> <li>2) The current grading system for Canadian pork mirrors the outdated US system. The system must support valuable Canadian attributes and support brand Canada differentiation in the global market.</li> </ol>



Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Need a conscious effort on the part of government to reduce red tape.</li> <li>2) CFIA is not recognized as innovative in problem solving. CFIA should collaborate with the industry and set milestones for accomplishments.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Develop a schedule and objectives for reduction of red tape with a stakeholder committee.</li> <li>2) Update the grading system. Although this will be very complicated, it is instrumental for producers to quantify the value of the cut of pork based on the end use and get rewarded. For example, lean hams are preferred for curing, marbled hams are preferred for fresh meat.</li> <li>3) Develop a ‘transportation of animals’ protocol to address animal welfare aspects as well as biosecurity risks.</li> </ol>

Issue	Market Access
What is working well?	<ol style="list-style-type: none"> <li>1) Canada exports 75% of its pork production. Canadian pork is increasing its share of market in the highest value market, Japan, because of our ability to identify their consumer needs and consistently deliver fresh chilled pork to their market. US continues to be the largest volume export customer. China, a huge market, is a price buyer and consumes significant tonnage of less valuable cuts, again helping the overall market.</li> <li>2) The value of the Japanese market is well quantified. Every week a container of fresh chilled pork is exported to Japan represents an additional \$0.50/cwt of pork produced per week.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) The economic model of Canadian pork production is highly leveraged on our ability to export primarily to Japan and US markets.</li> </ol>

Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Access to prudent use of MIA.</li> <li>2) Traceability documentation in addition to data on carcass conformation and high value cuts.</li> <li>3) The ability to zone the country with international trade recognition in the event of foreign animal disease outbreak.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Augment the current traceability programs with CPC to include an audited trail of production practices by carcass. Producers need to be paid for the additional documentation to drive adoption.</li> <li>2) Producers should have access to carcass yield and meat quality data to meet changing consumer demands and new products.</li> <li>3) Ensure science does not get forgotten in the push for reduced use of MIA.</li> <li>4) Create zones in Canada, at a minimum at West Hawk Lake, Manitoba for East/West division.</li> </ol>

Issue	Disease/Pest/Productivity
What is working well?	<ol style="list-style-type: none"> <li>1) Current access to medicines, vaccines, biosecurity and veterinary diagnostics that are safe and efficacious.</li> <li>2) Specific feeding programs to support pork quality for export market.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) The changes in access to antimicrobials needs to be balanced against the reality of the presence of disease agents. The contribution of animal agriculture to the overall threat of AMR in human medicine is not well documented in science. Current products such as pro/prebiotics do not provide the same efficacy or consistent benefits for health. At this time there is no electronic means to capture the prescribed use, to audit the efficacy or to trace treated animals.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Producer or processor/retailer mandate that RWA is the only production method available as a marketing position.</li> </ol>

Recommendations

- 1) Marketing RWA to consumers should not cripple the production of safe and sustainable animal protein or the ability to adopt innovative technology.
- 2) Ontario Pork should continue to collaborate with stakeholders as they did in 2016 when they promoted the prudent use of MIA neither at the expense of animal welfare nor unnecessary economic loss of productivity.
- 3) The country should be zoned (with international trade recognition) to better manage and respond in event of a foreign animal disease outbreak.
- 4) Develop a ‘transportation of animals’ protocol to address fomite transfer between farm and processor. Specifically, precautions must be in place for transport of sows to US processing plants to avoid transfer of disease agents like PED.

Issue	Packer/ Processor/ Retail
What is working well?	1) Modernized processing facilities coupled with possession of experience and relationships for exportation. Strong domestic brands in the distribution and retail channel. Unlike other meats, brands of pork are primarily Canadian and not US based.
What is not working well?	1) Processing of pork is extremely concentrated: Maple Leaf, Olymel, Sofina and Conestoga Meats. Loblaws and Sobeys dominate the retail channel. Is there a place for US packer presence in Canada or does shipment of live hogs and weaners meet the needs in price competition?
Why are the actions not working?	1) Processor efficiency is optimized with the heaviest dressing weight, however, the high value cuts are compromised with high carcass weights. Either upgrades in the grading system or price incentives for producing carcasses for specific market segments need to be provided.

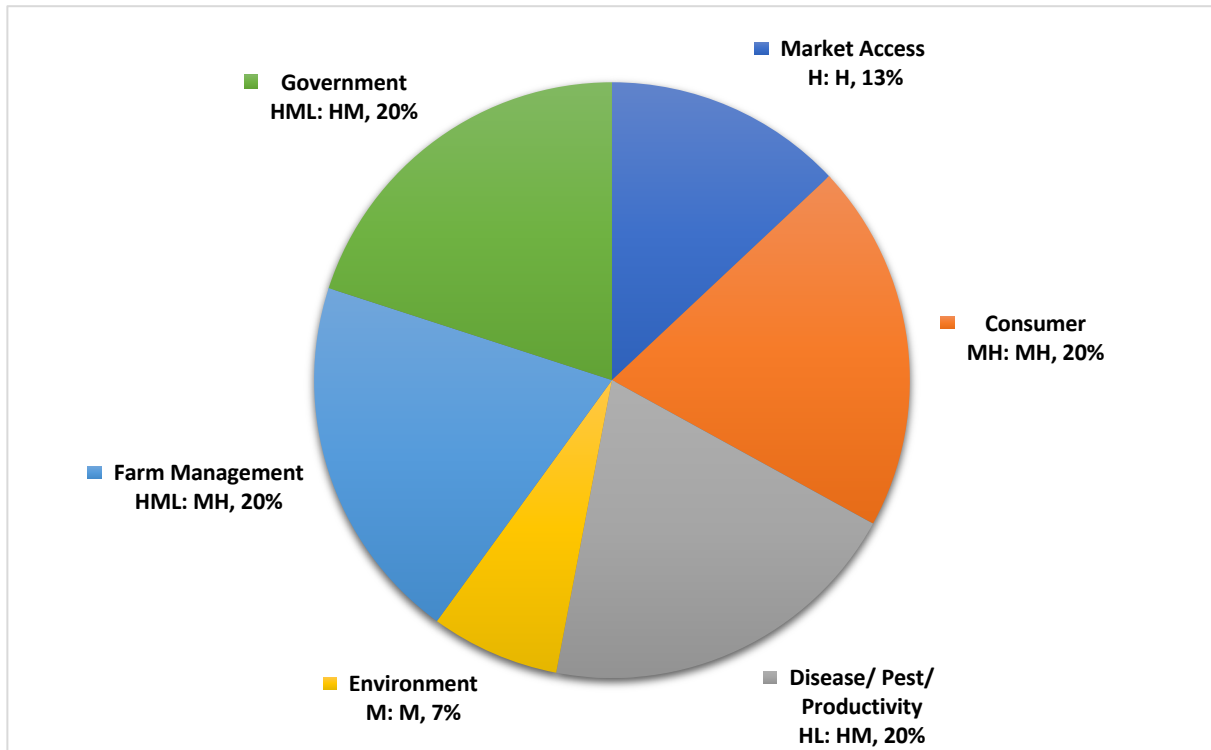
Recommendations	<ol style="list-style-type: none"> <li>1) Other sectors should consider collaboration between co-operative member producers and the processor. Conestoga Meats is an example of the model that recognizes and rewards production of pork with the end use product in mind.</li> <li>2) Retailers should be included in the conversation of all aspects of production so that they are assured of the safety and sustainability of pork as well as science-based production practices to educate consumers on discerning the truth of ‘fork to farm’.</li> </ol>
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Issue	Consumers
What is working well?	1) Strong export sales have good margins and no current consumer crisis.
What is not working well?	1) Ensuring that key messages on the quality of CQA reaches the audiences.
Why are the actions not working?	1) Funding and continuous learning of what resonates best with different stakeholders.
Recommendations	<ol style="list-style-type: none"> <li>1) Industry must invest resources to ensure that key messages are delivered to politicians and bureaucrats at the federal and provincial levels.</li> <li>2) Collaborate with other producer groups on common issues on a semi-annual basis; benchmarking progress.</li> <li>3) Collaborate with stakeholders to ensure communication and actions required move forward on a timely basis; include processors, retailers, advocacy and government.</li> </ol>

# Poultry

(N=3)

**Figure 8. Frequency and Probability/Impact of Issues Mentioned**



Issue	Farm Management
What is working well?	<ol style="list-style-type: none"> <li>1) Farm business plans are useful in completing the succession planning exercise.</li> <li>2) Supply management buffers changes in cost of production from implementation of RWA with the resulting loss in productivity and higher death rate.</li> <li>3) Farm diversification of products includes high value, cash and horticultural crops. Farm gate sales of eggs helps keep producers connected with the community.</li> </ol>

<p>What is not working well?</p>	<ol style="list-style-type: none"> <li>1) Banks do not always recognize farm business plans as the banks each have their own proprietary software and metrics.</li> <li>2) RWA is currently approx. 20% of the production volume. Losses in mortality since the implementation of RWA have increased from 3-4% in conventional production to &gt;8% in RWA. Serious animal welfare issues result from decision made to been seen to be responding to consumer/retail marketing at the expense of sound science.</li> </ol>
<p>Why are the actions not working?</p>	<ol style="list-style-type: none"> <li>1) Chicken Farmers of Canada have committed to terminating use of Category I and II antibiotics by the end of 2018 and Category III antibiotics in 2019 with little to no consultation from veterinary pathologists. Turkey farmers are more pragmatic and evaluating progressive changes in AMU.</li> </ol>
<p>Recommendations</p>	<ol style="list-style-type: none"> <li>1) HC, CFIA, provincial ministries of agriculture should be consultative with poultry veterinarians regarding VA implementation. Experience in the field shows clear gaps in the understanding of government staff regarding implementation and monitoring.</li> <li>2) Consider a check-off type program to fund food advocacy and education with a focus on social media. Leverage the current big data news to question everything posted on the web, who uses the information and for what purpose.</li> <li>3) Invest resources/incentives into training poultry veterinarians. There is a shortage of trained poultry veterinarians and it will continue to increase as baby boomers retire. Poultry meat is the fastest growing animal protein source with the least amount of dedicated curriculum at veterinary schools; in the best interest of the industry, this needs to change.</li> <li>4) Use of block chain or alternate big data tools for data capture of production practices and efficiently sharing through the entire production chain is recommended.</li> </ol>



<i>Issue</i>	<i>Government</i>
What is working well?	1) Current MIA have worked with consistent efficacy in the prevention and control of necrotic enteritis for the past 35 years in broiler production.
What is not working well?	1) Implementation of the VA is causing an animal welfare issue before the ruling officially takes effect as CFC tries to be pro-active in implementing new policies and procedures for growers by banning the use of MIA.
Why are the actions not working?	1) Government needs to understand the risks in the VA implementation to animal welfare, lost production and potential food safety. 2) Implementation of the new rules, especially in the area of drug distribution, is particularly challenging.
Recommendations	1) HC should become accountable for review and timely registration of alternative new products to compensate for lost access to MIA. 2) HC, CFIA and provincial ministries of agriculture need to be consultative in how the VA are implemented. Experience in the field shows clear gaps in the understanding of government staff regarding implementation and monitoring. 3) Establish properly-staffed regionally-located diagnostic labs to service the increase in gut health diseases resulting from the change in use of MIA. 4) Ensure the US Farm Bill 2018 Policy details are clear and that Canadian politicians understand the implications.

<i>Issue</i>	<i>Disease/ Pest/ Productivity</i>
What is working well?	1) Current MIA have worked well in the prevention and control of necrotic enteritis for the past 35 years.

What is not working well?	<ol style="list-style-type: none"> <li>1) Implementation of the VA is causing an animal welfare issue before the ruling officially takes effect as CFC tried to be pro-active in implementing new policies and procedures for growers.</li> <li>2) New AI strain of Delmarva virus results in production dropping to 40% from 99% in egg layers.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Government needs to understand the risks in the VA implementation to animal welfare, lost production, potential food safety and environmental impact.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) HC needs to become accountable for review and registration of alternative new products to compensate for lost access to MIA.</li> <li>2) HC, CFIA and provincial ministries of Agriculture need to be consultative in how the VA are implemented. Experience in the field shows clear gaps in the understanding of government staff regarding implementation and monitoring.</li> <li>3) Non-clinical technical staff from industry should evaluate the flock before it leaves the farm for harvest as the first line of defense in food safety. The loss of MIA in the prevention of gut health diseases raises risk of listeriosis, campylobacter and colonial hepatitis.</li> </ol>

Issue	Market Access
What is working well?	<ol style="list-style-type: none"> <li>1) Supply management has provided Canadians with a safe, wholesome supply of poultry products. Predictability in production and profitability creates a stable farm economy for producers.</li> <li>2) The voice of individual poultry commodities (eggs, broilers and turkeys) and collectively has enabled the poultry sector to be more proactive. Individually and collectively the poultry sector have been proactive in addressing consumer concerns and adapting to new management practices to meet the evolving consumer demands.</li> </ol>



<p>What is working well?</p>	<ol style="list-style-type: none"> <li>3) The poultry producers have been part of the leadership in animal production. They prepare flock reports and enforce adoption of the flock reports to document all of the production practices in order to answer how we produce poultry products including third party audits. The poultry sector is ‘taking responsibility for their businesses – taking on challenges ourselves – rather than waiting for them (consumers) to come to us – being leaders – that’s the right thing to do’<sup>24</sup></li> <li>4) Farm diversification of products includes high value cash and horticultural crops. For example, farm gate sales of eggs help to keep producers connected with the community.</li> <li>5) Broiler meat consumption has increased by 12% in the past four years (2017).</li> <li>6) Egg and egg product consumption has increased in the past five years at a CAGR of 3.4%.</li> <li>7) Turkey consumption has been relatively static over the past five years.</li> <li>8) Communication between producers and producer organizations appears to be timely and useful.</li> <li>9) Continuing growth of high-value further-processed meat, eggs and breeding stock for export resulting in a bigger contribution to the Canadian economy.</li> </ol>
<p>What is not working well?</p>	<ol style="list-style-type: none"> <li>1) Continuing pressure on supply management during trade renegotiations.</li> <li>2) Product labelling as meat from non-animal based new technologies.</li> </ol>
<p>Why are the actions not working?</p>	<ol style="list-style-type: none"> <li>1) Unpredictable nature of the NAFTA renegotiation process delays investments.</li> </ol>

<sup>24</sup> CFC 2017 Annual Report <http://www.chickenfarmers.ca/wp-content/uploads/2018/03/2017-Annual-Report-ENG-web-2.pdf>



Why are the actions not working?	2) Stay engaged in the rapidly moving technology in non-animal-based proteins. Investments from global protein producers makes this a reality.
Recommendations	<ol style="list-style-type: none"> <li>1) Continue to commit to finance and engage all of the participants in the supply system and across species with Supply Management.</li> <li>2) Continue to grow the leadership capacity as a pro-active industry position.</li> <li>3) All animal protein producers should understand the drivers of new technology, consumer trends and how to position their brands rather than be positioned by the emerging technology.</li> <li>4) Continue professional lobby efforts with policy makers and media to ensure they have literacy in supply management, critical thinking about information present in social media, and understanding how the industry is leading sustainable protein production.</li> </ol>

Issue	Consumer
What is working well?	<ol style="list-style-type: none"> <li>1) Communications that engage the consumer, resulting in support and growth in demand for poultry products.</li> <li>2) Contributions to local food banks of poultry products by producers connects with the community and brings real connection that farmers are your neighbours.</li> <li>3) Retailers like McDonald's that take a balanced approach to demands of consumer groups with animal welfare<sup>25</sup>.</li> </ol>
What is not working well?	1) Education with the key influencers on the implications of consumer trends with regard to AMU, housing and genetics.
Why are the actions not working?	1) Not enough investment in education for the key influencers and policy makers.

<sup>25</sup> <https://www.wattagnet.com/blogs/27-animal-agribusiness-angle/post/32478-mcdonalds-keeps-control-with-broiler-welfare-policy>

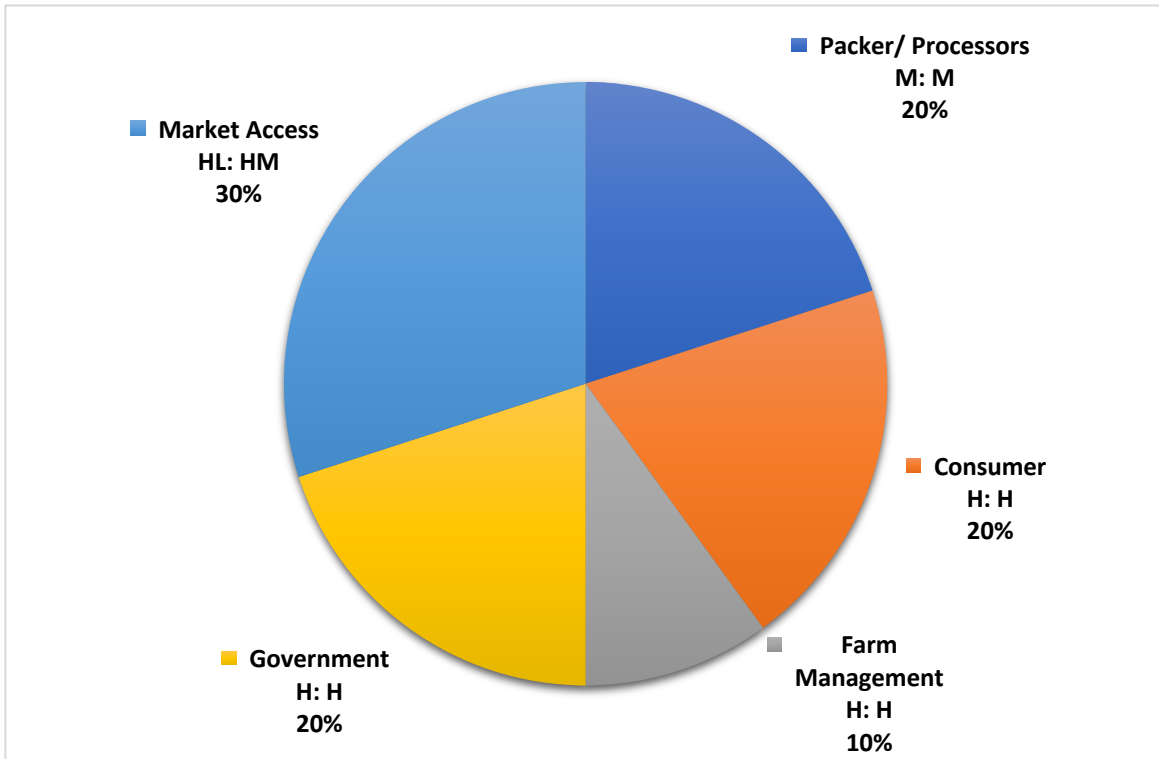
Recommendations

- 1) Engage the NGO sector and all stakeholders in animal welfare discussions to clearly differentiate animal rights activism from animal welfare. Include all food animal species groups in the discussions.
- 2) All animal protein producers should understand the drivers of new technology, consumer trends and how to position their brands rather than be positioned by the emerging technology.

## Dairy

(N=2)

Figure 9. Frequency and Probability/Impact of Issues Mentioned



Issue	Government
What is working well?	<ol style="list-style-type: none"> <li>1) Supply management at the present time appears to have the support of the government.</li> <li>2) Milk substitute products like Almond Milk are retailed in separate grocery sections to avoid confusion with consumers. The same premise may apply to new technology that is developing non-animal protein products.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Proposed changes from HC for the Canada Food Guide do not appear to be based on evidence-based science for human nutrition. Dairy industry representation was not invited in the public consultation process.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Possibly the industry should challenge itself in the reach and frequency of its government lobby and communications strategy.</li> <li>2) Negotiations for the renewal of the NAFTA are unpredictable and complicated by relationships with the truth.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Recognize and collaborate with the entire supply-managed sector and the non-supply management sectors. DFC have adopted an industry leadership position to meet the objectives of dairy farmers for domestic and new export markets.</li> <li>2) Do not undermine the economic footprint of Canada's dairy industry with trade-offs in new or renewed trade agreements.</li> <li>3) Ensure the US Farm Bill 2018 Policy details are clear, and the Canadian politicians understand the implications.</li> </ol>

Issue	Disease/Pest/Productivity
What is working well?	<ol style="list-style-type: none"> <li>1) World leading genetics, skilled husbandry, excellent nutritional science, safe and effective for cows, with safe and effective animal health products result in disease management and productivity as a minor risk.</li> </ol>

What is not working well?	1) Evaluation of cattle and making humane/ethical decisions of whether to transport them or not, needs updated policies.
Why are the actions not working?	1) The DFC are defining the next subject in fine-tuning a well-organized production system.
Recommendations	1) Work in collaboration with pork and beef sectors in defining a process, documentation and adoption by all parties to meet animal welfare and sustainability requirements. A supportive relationship with an NGO like OSPCA and WWF may help bring credibility to the new process for transportation of livestock.

Issue	Market Access
What is working well?	1) Dairy farmers and dairy products enjoy a strong reputation and brand image with Canadians.
What is not working well?	1) Renegotiation of the NAFTA has potential for changes in quota tariffs – potential for change impedes investment in growth in the sector.
Why are the actions not working?	1) Unpredictable nature of the negotiation process for NAFTA. 2) Rapidly moving technology in non-animal-produced proteins needs oversight in product labelling to be clear to consumers it is not meat.
Recommendations	1) Continue to engage all of the participants in the supply system and across species with Supply Management. 2) Continue to grow the leadership capacity with a proactive industry position. 3) Continue to engage milk processors, particularly in market development with Class 7 quota. 4) Encourage investment from other milk processors, ranging from micro-artisanal producers to multinationals, to grow the market for dairy products and milk ingredient products. 5) Provide resources so all animal protein producers can understand the drivers of the technology, consumer trends and how to position their brands rather than be positioned by the emerging technology.



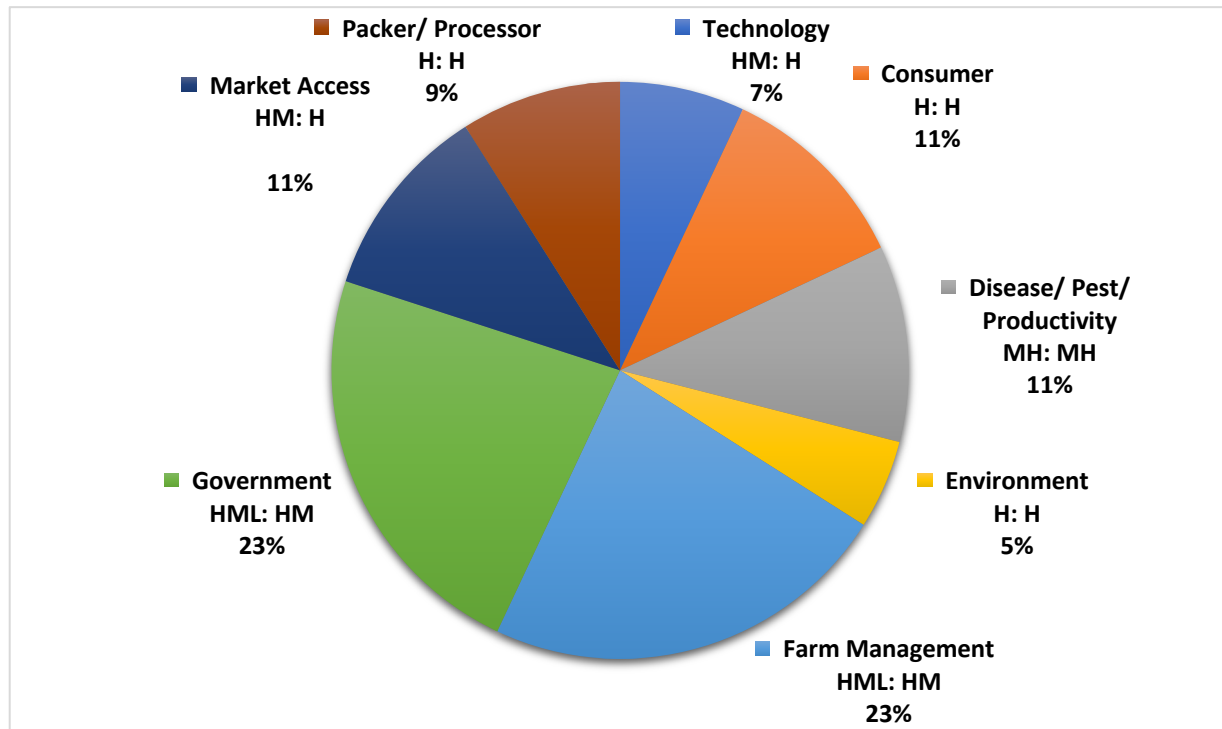
Recommendations	6) Engage in a professional advocacy effort with policy makers and media to ensure they have literacy on Supply Management, are critically thinking about information present in social media and understanding how the industry is leading sustainable protein production.
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Issue	Consumer
What is working well?	1) Communications and marketing that engaged the consumer, resulting in support and growth in demand for dairy products, resulted in a 5.3% increase in demand in 2017. 2) Farm product diversification such as farm gate sales of artisanal cheese, sweet corn or horticultural crops enables engaging urbanites to connect with dairy farmers.
What is not working well?	1) Education with the key influencers and policy makers on food literacy, critical thinking of where food comes from and truthfulness of social media news.
Why are the actions not working?	1) Reach and frequency of messages.
Recommendations	1) Engage all stakeholders, and the NGO sector in particular, in animal welfare discussions to clearly differentiate animal rights activism from animal welfare. Include all food animal species groups in the discussions. Ensure adequate funding is provided and oversight on the messaging. 2) All animal protein producers need to understand the drivers of new technology, consumer trends and how to position their brands rather than be positioned by the emerging technology.

# Beef

(N=9)

**Figure 10. Frequency and Probability/Impact of Issues Mentioned**



Issue	Farm Management
What is working well?	<ol style="list-style-type: none"> <li>1) Growing the success of ‘local’ retail success from individuals, provincial (Ontario Corn Fed) and national (Sterling Silver).</li> <li>2) Continue to design brands to fit trends in customer cooking and eating.</li> <li>3) Environmental farm plans and water and soil conservation plans.</li> <li>4) Overall, FPT government programs are recognized as working reasonably well ((AgriInvest, AgriStability, AgriRisk (Crop Insurance), and AgriRecovery RMP, CPIP, ASRA)).</li> <li>5) Unit train unloading facilities in W. Canada work well for US corn access to offset limits in access for feed wheat and barley.</li> </ol>

<p>What is working well?</p>	<ol style="list-style-type: none"> <li>6) NAFTA has worked well for the integration of a North American beef industry.</li> <li>7) Exports continue to grow the value and market share of Canadian beef.</li> <li>8) Harmony Beef as a processor in AB is strategic to relieve packer capacity and add competition in a highly-concentrated processor sector where approximately 80% of the harvest is in the control of two organizations in the west and approaches 90% for the country.</li> <li>9) Diversification of product produced on a farm/ranch helps buffer swings in profitability. For example, seed stock (plant and animal) to farm retail of beef and further processed case-ready cuts.</li> </ol>
<p>What is not working well?</p>	<ol style="list-style-type: none"> <li>1) Price discovery of cattle along the production chain by producers. Price discovery must be delivered to succeed in an increasingly volatile market.</li> <li>2) Foreign land ownership (investments with no resident base) will affect industry stewardship from a Canadian, long-term perspective.</li> <li>3) Lessons learned from the BSE outbreak have not been fully acted upon (e.g., zoning).</li> <li>4) Supply of skilled labour and consistently good management skills.</li> <li>5) Lean manufacturing practices to identify all sources of waste and clear them from the system relies on the ability to document and use the data to change behaviours.</li> <li>6) Adoption of on-farm data collection is below that in other species.</li> <li>7) A lack of a collaborative industry position of producers continues to hold the whole sector back from progressive new approaches in key areas; communication, sustainability and transparency of production practices.</li> <li>8) Use of block chain or alternate big data tools for data capture of production practices and efficiently sharing through the entire production chain.</li> <li>9) Succession planning needs to be part of the business planning cycle. Specific tax law amendments are needed to enable intergenerational transfer of business assets in an industry with long business cycles</li> </ol>



<p>What is not working well?</p>	<p>(average cow life span is 8 years). The departure of producers from the industry is double digit in the past 5 years and will accelerate as baby boomers move to retirement. Who will own the land, the cattle and the skills in a rapidly consolidating industry in both Western and Eastern Canada.</p> <p>10) Interprovincial restrictions on sale of beef need to be changed to enable growth of ‘local’ Canadian beef.</p> <p>11) Burdensome paperwork for government compliance is getting worse each year.</p>
<p>Why are the actions not working?</p>	<p>1) ‘The collective one voice of other species producers has enabled them to make faster progress on a range of industry issues. We are getting further behind’.</p> <p>2) In an integrated North American market, we are not competitive with the US as they have mandatory price discovery since 2001. The Canadian market has shifted significantly from a cash basis &gt;70% in 2009 to &gt;80% contracted and 20% cash.</p> <p>3) Resistance to change in the adoption of traceability software currently available, such as VBP<sup>+</sup>, bioTrack or bioLinks.</p>
<p>Recommendations</p>	<p>1) Producers are guilty of thinking about cattle and not beef. Refocus the groups position for a strategy focused on the consistent eating experience and nutritional qualities of beef - domestic and international consumers.</p> <p>2) Collaborate with processors, government and industry to find a new method of price discovery.</p> <p>3) Despite millions of dollars invested in traceability for beef, the adoption of a transparent flow of information has not yet been implemented. If it is beyond the capability of industry leadership, then government will have to help with a solution to prove the sustainability and trust in the Canada beef brand for export.</p> <p>4) Provincial slaughter plants should be able to ship meat between provinces in Canada, but not be exported internationally.</p>

## Recommendations

- 5) Accelerate the rate of replacing association directors with next generation beef producers to advance the rate of change to catch up to other species sector leadership. ‘Rugged individualism in a competitive global market is broken’.
- 6) ‘Support NAFTA trade renegotiations as an industry initiative with quantification of all Canadian subsidy, tax breaks, community pastures, etc. and benchmark against trading partners comprehensive support programs to defend all of our production practices. This is how we beat the softwood lumber dispute in a protectionist environment and ensure that we get paid from infringing parties for WTO dispute settlements’.
- 7) A clear trend is well underway. Production units are either aligned to (1) increasingly large volume commodity beef where it is the role of the processor to identify consumer segments to deliver a valuable eating experience or (2) next generation beef producers are diversifying and integrating with stakeholder partners to directly market a higher value product to their market segment. Both options appear to be viable for long-term sustainability. Those producers positioned in neither market sector # 1 or # 2 in beef production are in a precarious long-term position. This third market sector may be increasingly described as the domain of the life style, sunsetter or part-time producer. As an industry, the challenge will be to ensure the strategy and voice of the industry is driven by the first two market sectors. Resources should be allocated primarily to sectors # 1 and # 2 to ensure those in the sustainable sectors.
- 8) The beef sector should develop resources and policies that will allow them to be prepared for massive disruption in current behaviours. Disruptions include consumer demand for transparency in production practice, addressing consumer misconceptions, and new technology from non-animal-based protein sources.



Issue	Government
What is working well?	<ol style="list-style-type: none"> <li>1) Overall, FPT government RMP programs are recognized as working reasonably well ((AgriInvest, AgriStability, AgriRisk (Crop Insurance), and AgriRecovery RMP, CPIP, ASRA)).</li> <li>2) Opening new market access with the new trade agreements CPTPP, CETA.</li> <li>3) Focus and resourcing to hopefully reach a positive outcome for NAFTA.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Taxation legislation supporting succession planning.</li> <li>2) Interprovincial trade of meat from provincially inspected facilities.</li> <li>3) Documentation to support the claims of Canada Brand does not include a third-party audit of practices for food safety, biosecurity, sustainability practices and phytosanitary.</li> <li>4) A mass balance needs to be implemented for traceability and food fraud from both domestic and foreign suppliers of agri-foods.</li> <li>5) Requirements and audits for imported products do not receive the same rigour and scrutiny as Canadian products.</li> <li>6) Regulations on land use and ownership to preserve Canada’s farm land and not have foreign entities accessing our natural resource for their domestic food policy or land speculation.</li> <li>7) New regulations and initiatives need to have the focus to support the majority of production with a commensurate significant gain rather than the most vocal group that gets the financial support.</li> <li>8) The current grading system does not differentiate Canada Brand and recognize and reward production of the highest quality beef.</li> <li>9) Re-opening markets that remain closed from BSE or trade barriers such as beta-agonists or steroid hormone implants.</li> <li>10) Deliver on OIE recognition and zoning for Canada.</li> <li>11) Carefully monitor AMU from a science-based evaluation. Do not compromise the welfare of animals and efficient use of land and resources.</li> </ol>

<p>What is not working well?</p>	<p>12) Address the labelling of non-animal-based proteins as they are now on the market in an unregulated food labelling sector.</p> <p>13) Include all producer groups of animal protein in the revision of the Canada Food Guides for a balanced debate.</p> <p>14) Agriculture Canada needs to take accountability for the slow process for new strains of barley registrations. The impact is lost gains in plant productivity and requires more corn imports from US.</p> <p>15) Ensure the consideration of unintended consequences in ethanol support programs on livestock.</p> <p>16) Red tape paper work reduction needs collaboration from producers.</p>
<p>Why are the actions not working?</p>	<p>1) Concern that the majority of regulators with a mandate to provide direction to farmers are urban with limited connection to agriculture.</p> <p>2) Rapidly changing market place is forcing reallocation of resources and expertise from regulatory structures organized for adherence to processes that may not be relevant today.</p> <p>3) Complexity of intergovernmental agencies that operate in silos or competing for resources; primary needs for change are improvement in communication – listening skills and a sense of urgency to meet stakeholders and domestic/export demands of customers.</p>
<p>Recommendations</p>	<p>1) In developing agri-food policy and programs there is invariably a conflict between economic policy and social policy: the support for productive and profitable farms versus the considerations of rural people and communities. The recommendation is that governments address the needs on an evidence-based policy and programs that support those farms/ranches which have a proven record of being profitable in a vibrant and viable sector.</p>



Issue	Disease/Pest/Productivity
What is working well?	<ol style="list-style-type: none"> <li>1) Industry recognizes HC and CFIA generally provide timely review of new product animal health submissions. The benchmark is that similar technology is available to producers in both Canada and the USA at the same time.</li> <li>2) Legislation has closed the OUI loop hole in 2017.</li> <li>3) Via CIPARS, Canada has an industry-led solution for accurately and timely reporting of use of MIA.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) While the Veterinary Authorization regulations are in place and some producer groups are actively implementing bans for the use of MIA, there is neither an industry standard for the collection and analysis of the data in Canada, nor an evidence-based rationale for banning the use of MIA, nor an animal welfare assessment of the economic cost of AMR.</li> <li>2) Proposals for cost recovery of the regulatory approval process are not realistic in terms of a cost-benefit relationship for the animal health industry.</li> <li>3) Despite the BSE outbreak in 2003, the creation of OIE zones enabling Canadian producers to continue to serve export markets has not been implemented 15 years later.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) The beef industry has learned lessons from the BSE outbreak but has been unsuccessful in motivating government action to preserve access to export markets from the outbreak of a foreign animal disease. Collectively, the industry and government lack a sense of urgency in reaching a timely result.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Invest finances and resources in research that explores the contribution of animal agriculture to the overall threat of antimicrobial resistance to human health; the linkage currently remains unclear. In Canada, bacteria that harm animals have rarely been studied for AMR. Limited existing information</li> </ol>



Recommendations

suggests that resistance is present in some but not all of these bacterial organisms.

- 2) Engage in research that aims to better understand the economic costs of AMR; currently there is very little knowledge on this topic.
- 3) Industry needs to design and deliver a Veterinary Authorization documentation system that captures relevant information in an electronic format, with the capability to serve all species nationally.
- 4) There is significant feed and livestock industry interest in non-antimicrobial pre- and probiotic products, but the commercial products available to date haven't shown measurable or consistent benefits for animal productivity and/or health. Research is needed in the areas of diagnostics and therapeutics for veterinary medicine, particularly on-farm to test the diseases in animals for which there are no effective vaccines.

Issue	<i>Market Access</i>
What is working well?	<ol style="list-style-type: none"> <li>1) Beef producers and beef enjoy a strong reputation and brand image with Canadians and our export market.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Beef does not have a functioning traceability system that is adopted by producers to support transparency and sustainability of production practices for Canada Brand.</li> <li>2) Unpredictable nature of the negotiation process for NAFTA. NAFTA has potential for serious disruption of fully-integrated North American production of safe and wholesome beef. In the immediate term, the continuing element of risk delays investment by industry.</li> </ol>

Why are the actions not working?	1) Beef producers and regulatory agencies are not keeping up with the rapidly moving technology in big data analytics to support documentation of production practises <sup>26</sup> .
Recommendations	<ol style="list-style-type: none"> <li>1) Resolve the creation and recognition of production zones in Canada by OIE in 2019.</li> <li>2) Producers and CFIA need to rethink the HC cost recovery process.</li> <li>3) Government should consider a tax incentive for producers adopting a third party-audited electronic repository of beef production and processing practices that connects a flow of information between channel partners. Linking other species data is also important. It is recommended that the data bases and data security be outside the control of producers, processors and government.</li> <li>4) Grow the leadership capacity, capability and commitment to a more proactive industry position.</li> <li>5) All animal protein producers should be supported so they can best understand the drivers of new technology, consumer trends and how to position their brands rather than be positioned by special interest groups or emerging technology.</li> <li>6) An intensive, well-financed, professional information effort should be made with policy makers and media to ensure: 1) they have literacy in all aspects of beef production, 2) the nutritional importance of beef, 3) critical thinking about information present in social media and 4) understanding of how the industry is leading sustainable protein production.</li> </ol>

<sup>26</sup> Nasson, J. March 2018. "NTCA 2018: How technology is changing the beef industry faster than you think. Retrieved from <https://www.beefcentral.com/news/ntca-2018-how-technology-is-changing-our-industry-faster-than-you-think/>

Issue	Consumer
What is working well?	<ol style="list-style-type: none"> <li>1) Communications and marketing strategies that engage the consumer, resulting in support and growth in demand for beef consumption at home and abroad.</li> <li>2) Creation of new brands and case-ready presentations to satisfy changing consumer palate.</li> <li>3) Farm product diversification to create local high-value beef while engaging urbanites to connect with beef producers.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Education with the key influencers, policy makers on food literacy, critical thinking of where food comes from and truthfulness of social media news.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Limited investment in education and fine tuning the reach and frequency of messages.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Increase the frequency of dialogue with all stakeholders in the production channel to find areas of mutual benefit and drive out wasted resources.</li> <li>2) Engage other business associations and the NGO sector as well as all beef industry stakeholders in business discussions.</li> <li>3) Show what we do and prove it.</li> </ol>

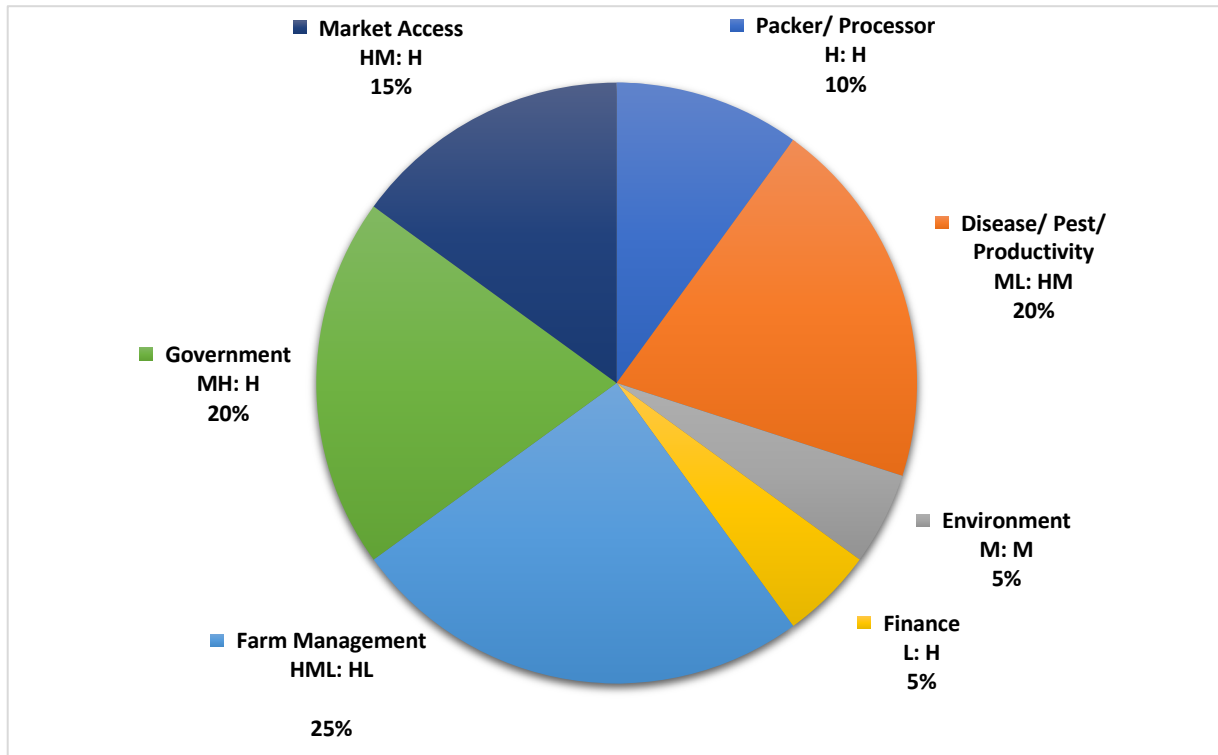




## Small Ruminants: Veal, Sheep and Goats

(N=4)

Figure 11. Frequency and Probability/Impact of Issues Mentioned



Issue	Farm Management
What is working well?	<ol style="list-style-type: none"> <li>1) Sheep producers have organizations federally and provincially.</li> <li>2) A Canadian Verified Sheep Program is in place for quality assurance.</li> <li>3) Quebec has a risk insurance program which ensures farmers with a flock numbering greater than 400 ewes will receive a baseline farm income.</li> <li>4) The Canadian flock meets 40% of the domestic demand. There is room for domestic market growth. The majority of lamb meat is imported fresh or frozen from New Zealand and Australia.</li> <li>5) Veal follows the beef market. Depending on expected feeder cattle price, dairy veal calves can be diverted to the feedlot industry.</li> </ol>



What is working well?	6) Gay Lea, an Ontario milk cooperative, has organized approximately 120 producers for the production and sale of cheese. Gay Lea sets quota and milk quality standards for its members.
What is not working well?	<ol style="list-style-type: none"> <li>1) Dairy goat producers have been unable to organize themselves like other species.</li> <li>2) The small ruminant sector is heavily influenced by its participant demographics dominated by younger farmers (&lt; 45yr) and first-generation farmers. Notable demographics include: more so than in other species both genders are actively managing the farm. These younger farmers entering farming or entrepreneurs are supported by off-farm income or a spouse's full time farming income. The perception is that the number of full-time lamb or goat producers is relatively small compared with the total number of lamb or goat producers. Part-time farming with limited capital makes for a difficult market place.</li> <li>3) The processing facilities for milk, cheese and meat are limited in each province. Woolwich Dairies, the largest goat cheese manufacturer in ON, QC and WI was sold to Saputo in 2015. In 2017 Saputo sourced goat curd raw materials from Spain and dropped the price paid to Canadian producers by a factor of 2.2 times below the average local cost of production.</li> <li>4) With the exception of Quebec, most abattoirs for sheep and goats are provincially licensed.</li> <li>5) Limited experience in animal husbandry results in productivity of goats at approximately 50% of genetic capability due in part to high incidence of disease in herds and bactoscan counts in milk.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Sheep producers have been organized for many years; however, the impact of limited financial resources and a producer base strongly driven by life-style farming makes progress slow for the organization.</li> <li>2) Dairy goat producers have been unable to organize themselves as a collective group in ON which represents 40% of the national herd.</li> </ol>



Why are the actions not working?	3) Adoption of traceability software like bioTrack or bioLinks is rare. Australian and UK herd management programs have limited technical support in Canada and make the software challenging to use.
Recommendations	<p>1) Niche marketing of lamb on a regional basis should be further explored, as it is the most viable option. Documenting and understanding costs and production records should be improved in order to support the transparency expected by consumers. Further, accurate records and financials will justify capital investments as individual producers evolve their business strategy.</p> <p>2) Dairy goat farming is a high-risk proposition, so you must invest with caution. Notable exceptions are Gay Lea in ON and artisanal cheese manufacturers in ON and QC.</p> <p>3) New farmers have limited experience. Access to continuing education is needed.</p> <p>4) There are few medications/vaccines registered for use in the species. Biosecurity measures need to be formalized and strictly adhered to.</p> <p>5) Create processes that have the ability to hold multi-nationals accountable for supporting Canadian farmers if any public money (grants or tax breaks) is provided to the corporation.</p>

Issue	Government
What is working well?	<p>1) Overall, FPT government programs are recognized as working reasonably well such as RMP and Fed/Prov programs.</p> <p>2) Health Canada has a MUMS policy to support minor species drug registration.</p>
What is not working well?	<p>1) While RFID tagging is required for lambs, there are no tag readers that function at sales barns or processors so neither the individual animal number nor individual carcass performance is available.</p> <p>2) ON government continues to advocate investment in the dairy goat industry while the economic model is currently not viable.</p>

What is not working well?	<ul style="list-style-type: none"> <li>3) In ON, wildlife regulations from MNR, for predators (e.g., Algonquin wolf), operate in a silo from CFIA, OMAFRA.</li> <li>4) Cheese labelling laws don't distinguish cheese that is produced with Canadian milk compared with cheese just processed and packaged in Canada.</li> </ul>
Why are the actions not working?	<ul style="list-style-type: none"> <li>1) Small ruminants have a high representation of part-time farmers, making reaching consensus for effective policy very difficult.</li> <li>2) Decisions made in silos between various governmental agencies for predator management.</li> </ul>
Recommendations	<ul style="list-style-type: none"> <li>1) Until the goat sector is able to organize themselves, investment is difficult to justify.</li> <li>2) Support sheep producers financially commensurate with the size of this livestock sector specifically in food safety and transparency of production practices. Basic industry quantification of Stats Canada-type metrics needs to be supported so that the industry can benchmark progress.</li> <li>3) Investments and policy for small ruminants should be targeted to the segment of producers with the largest herds and productivity, where the production supports a full-time enterprise.</li> </ul>

Issue	Disease/Pest/Productivity
What is working well?	1) Canadian Sheep Federation has established CVSP and Food Safe Farm Practices.
What is not working well?	1) Dairy goats have a number of bacterial and viral pests to which there is a very limited number of approved drug registrations.
Why are the actions not working?	<ul style="list-style-type: none"> <li>1) The sector, relative to other livestock species, is small and does not get adequate resources.</li> <li>2) Limited knowledge of true costs of production so producers are price sensitive but value on investment insensitive.</li> </ul>



Why are the actions not working?	3) Small herds with minimal or no animal health programs and lack of biosecurity practices present a reservoir of infectious agents that can easily infect neighbouring well-managed herds.
Recommendations	<p>1) Production and husbandry education and record-keeping resources should be updated and available to producers working as an association.</p> <p>2) Small herds without effective disease and biosecurity practices should be quarantined as the population creates a vector threat to other ruminant species for serious disease.</p>

Issue	Market Access
What is working well?	1) Local niche markets for meat, milk and wool.
What is not working well?	1) Organized well-financed producer presence.
Why are the actions not working?	1) Fragmented by multiple agendas of the producers.
Recommendations	1) Encourage and support local cooperatives that help producers understand the power of focus on limited resources and a common voice for the sector.

Issue	Consumer
What is working well?	<p>1) Communications at the farm-gate retail level will connect with local community.</p> <p>2) Farm product diversification to create local high-value lamb, cheese and wool while engaging urbanites to connect with sheep/goat producers.</p>
What is not working well?	1) Focused sector messaging to consumers about the availability of local lamb and sheep products.

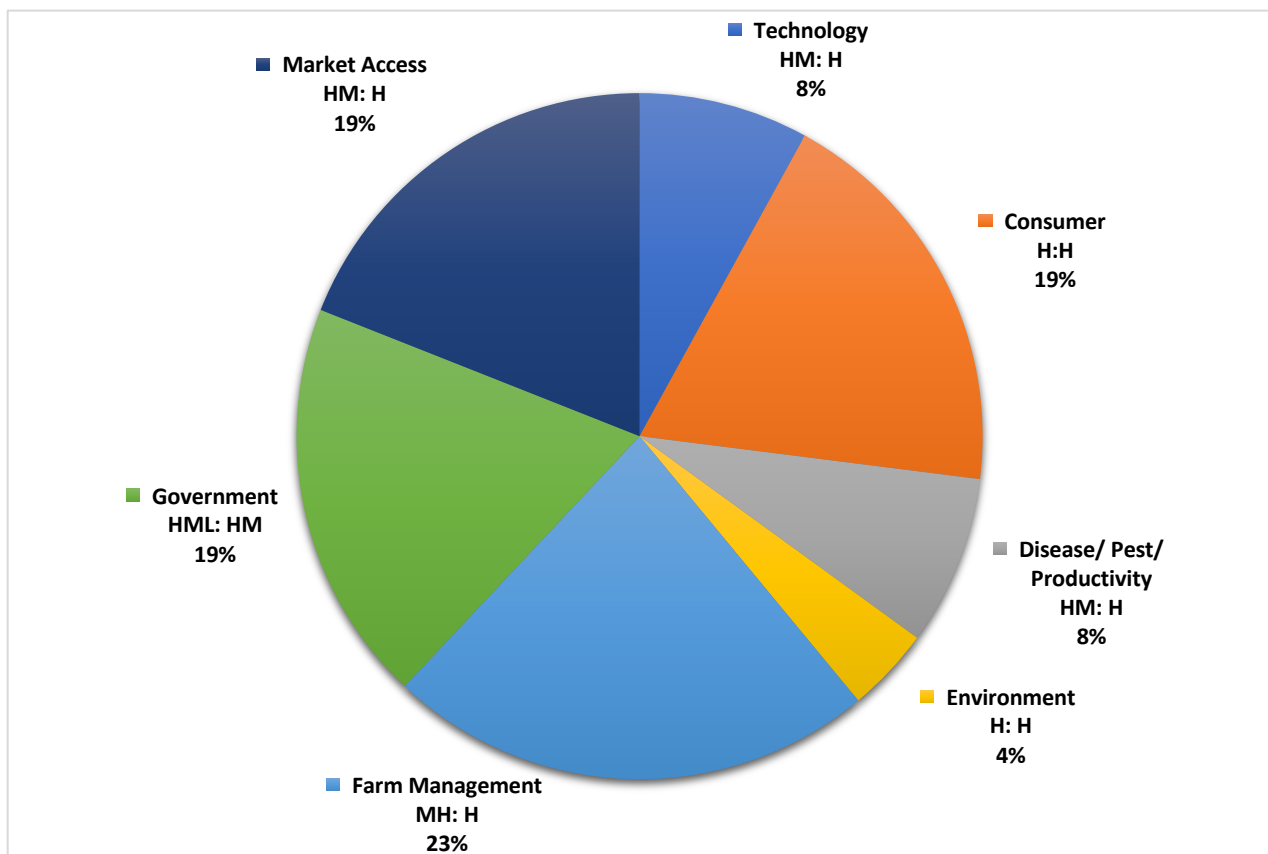


Why are the actions not working?	1) Limited resources for focused sector messaging
Recommendations	1) Grow the domestic and export sales of goat cheese as quickly as growth in raw materials allow. 2) Focus on consumer interaction at the farm gate level. 3) Target market development support for artisanal producers with the ability and commitment to prove what they say they do.

## Processor/ Retail

(N=10)

**Figure 12. Frequency and Probability/ Impact of Issues Mentioned by Processors/Retail**



Issue	Farm Management
What is working well?	<ol style="list-style-type: none"> <li>1) Consistent supply of livestock to processors so that on-time delivery of retail meat, milk and eggs is realized.</li> <li>2) Dairy, pork and poultry producers are focused and understand the need for communication with the end-to-end supply chain and capable of meeting the objectives.</li> <li>3) Beef producers are evolving in their capability and capacity to communicate with the end-to-end supply chain. Historical competition between cattlemen and processors makes the fluid communication more challenging. Producers focused on delivering ‘local’ sourced beef are increasingly skilled in making and building relationships and regular communication.</li> <li>4) CRSB launched a Certified Sustainable Beef Roundtable in 2018 and have reached an initial objective of 550,000 lbs of beef from 70 producers.</li> <li>5) Application of robotics for automation in processing.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Processors have a huge capital investment and must keep the operations running at capacity; therefore, not always will carcass conformation and qualities be the driver in pricing of raw materials.</li> <li>2) Beef tends to operate in silos resulting in infrequent communication and opportunities to build relationships with processors and retail.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Producers don’t historically reach out and interact with processors and retailers.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Decide to either be the lowest-cost producer of a commodity and supply big-box discounter or produce animal protein with a credible story to brand and the evidence to prove how you produce the product for higher margins.</li> <li>2) Realize that processors and retailers for high volume have opposing perspectives of local higher-margin processors and retailers.</li> </ol>



Issue	Government
What is working well?	1) Food inspection service branch of CFIA ensures Canadians and our export customers consistently have safe wholesome animal protein.
What is not working well?	1) Proactive plans to deal with Black Swan or Black Elephant events for food safety. 2) Delays and red tape in access to skilled labour, either locally trained or foreign workers.
Why are the actions not working?	1) Centralized departmental control far from the field operations (sub-optimum communication flow) and limited intergovernmental division interaction resulting in unintended consequences from a FPT decision.
Recommendations	1) Help set the framework for Brand Canada as an export, but individual species groups should lead the development of specific customer centric deliverables of quality. 2) HC and CFIA should change old processes and establish new ones that will improve the speed to approve new technologies. 3) Keep up with industry evolution- no decision is not a good decision; industry loses a competitive advantage with delays. 4) Meat and dairy industry individually and in concert with other business groups must make politicians/bureaucrats understand the multiplier effect of the livestock industry in Canada as it relates to energy, water, jobs, taxes and technology. 5) Rethink interprovincial trade barriers with provincial versus federal slaughter. Reserve federal for international exports. 6) Government needs to effectively deal with business-limiting Ontario issues, such as high hydro electricity rates.





Issue	Disease/Pest/Productivity
What is working well?	<ol style="list-style-type: none"> <li>1) CFIA does a good job of ensuring food safety.</li> <li>2) Retail/processor initiatives are demonstrating traceability from the farm to the retailer is possible to enable food safety, sustainability and animal welfare as well as detect food fraud.</li> <li>3) Beef, pork, poultry and dairy have industry initiatives to demonstrate traceability at different stages of development.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Limited feedback to producers on carcass conformation and high value cuts.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Historical lack of communication and relationships with stakeholders.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Find simple, easy wins to start the culture change of collaboration along the supply chain rather than one stakeholder having to lose in order that another stakeholder wins.</li> </ol>

Issue	Market Access
What is working well?	<ol style="list-style-type: none"> <li>1) NAFTA will prevail. There is much infrastructure that would take years to unwind, longer than political parties hold office.</li> <li>2) Canada Brand has a great image.</li> <li>3) Individual retail brands have strong brand awareness and preference with Canadians.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) CFIA's inability to respond to a food safety crisis and implement industry-led recommendations for improvement.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) All stakeholders in the industry need to collaborate, set industry standards and not rely on government to look after our business.</li> </ol>

Recommendations	<ol style="list-style-type: none"> <li>1) If you are in the branded market, then you need an audit trail from an independent third party. This should be self-regulated rather than government mandated.</li> <li>2) CFIA should allocate more resources to monitor and validate imports that are positioned to enter niche markets with fraudulent claims on food.</li> <li>3) Engage skilled professionals to effectively and truthfully provide food literacy and food safety to consumers, retailers and processors.</li> </ol>
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Issue	Consumer
What is working well?	<ol style="list-style-type: none"> <li>1) Canadians and our export customers trust Canada’s brands and we continue to grow our animal agricultural footprint.</li> <li>2) Consumers quantify affordability, safety, sustainability, nutritional requirements, sources for protein and food fraud as top of mind issues.</li> <li>3) Consumers are in the driver’s seat demanding what they think they want to eat.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) Social licence is broad and constantly changing due to internet, media, special interest groups and sensational news.</li> <li>2) Changing perspective from ‘field to fork’ to ‘fork to field’.</li> <li>3) Consumers ability to think critically about food and the system that delivers food unencumbered with sensational news.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Retailers marketing programs to differentiate food from a commodity on the basis of food illiteracy and lack of critical thinking on the part of consumers.</li> <li>2) Producers need to engage consistently in the communication of food literacy with processors, retailers and ultimately with the consumer.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Producers should work with retailers to help consumers understand where food comes from in order to proactively bridge the communication gap.</li> </ol>



## Recommendations

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- 2) Government should engage in their role of ensuring confidence in food safety and educating consumers with production and food literacy.
- 3) All stakeholders should collaborate to dispel fake news.

## Apiculture

Although not a part of the animal protein production sector, apiculture was included with one interview. For results, please see Appendix H: Apiculture .

## Conclusion and Recommendations

The eagerness with which invited participants gave up their valuable time to be involved with this study attests to the importance and current perception of risk in agri-food. Beyond the long-known risks of weather and disease, agri-food faces a growing number of risks, mirroring the exponential changes happening more broadly in technology, globalization and climate. These are well documented in Thomas Friedman’s book “*Thank You for Being Late*”.

Livestock agriculture is big business in Canada, generating approximately \$24 billion in value at the farm level. It is important to the Canadian economy, particularly considering the downstream economic impacts, not to mention the often taken for granted supply of safe and affordable food for Canadians.

Although the ranking of risks across all participants put Consumer as the first factor of concern, the variation by species, and very low ranking of this factor by the non-supply managed species representatives, should be cause for concern. The emerging potential risk of loss of market to a very specific and real new technology ‘manufactured animal proteins’ was not as highly ranked as it perhaps should have been. The absence of priority (other than for small ruminants) for Finance is not consistent with the demographic shifts occurring in livestock sectors in Canada. It is more a reflection of the age and stage of business of the participants.

There are clear patterns by species group in terms of ranking of risks. Risks that scored highest across all groups included: Government Policy, Farm Management and Market Access. Risks that scored low across species groups included: Environment, Technology and Finance. Risks that had variable rankings across groups included: Consumer Trends, Disease/Pest/Productivity and Processor/Distribution. The consistently low ranking for finance is most likely a reflection of the average age and establishment of business for participants in the study.

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<sup>27</sup> <https://www.albertafarmexpress.ca/2018/03/26/a-new-dawn-sustainable-beef-puts-money-in-producers-pockets/>

[https://www.canadiancattlemen.ca/daily/sustainable-beef-pilot-passes-first-quarter-mark?module=related-network&pgtype=article&i=#\\_ga=2.179813933.843090317.1522173152-669778001.1522173152](https://www.canadiancattlemen.ca/daily/sustainable-beef-pilot-passes-first-quarter-mark?module=related-network&pgtype=article&i=#_ga=2.179813933.843090317.1522173152-669778001.1522173152)

Canadian agri-food is adjusting to a new reality: the evolution from “Farm to Fork” to “Fork to Farm”. The new reality of agri-food is one where consumer demand dictates production and product specifications. While this has and can continue to cause challenges in terms of producer acceptance, as well as conflict with sound science, it is a reality of the new world of food. Some commodities, primarily those that are supply managed, have adjusted to this reality while others have not yet begun to address it.

Federal, Provincial and Territorial governments have invested heavily into the agri-food system over a series of policy frameworks (Agricultural Policy Framework; Growing Forward 1 and 2; Canadian Agricultural Partnership). For each of these initiatives, the majority of funding, over 70% according to a recent Ontario CAP announcement, has been dedicated to business risk management programs. While these have been very important, they tend to be reactive in nature while the minority of funding is geared toward more proactive initiatives involving research, development and innovation. Ideally, over time and with more effective management of risk, more of this funding would move to the proactive envelope of the funding.

Based on input received from interview and focus group participants, along with a review of current references, it is clear that the opportunity facing the Canadian agri-food system can only be met if some fundamental change occurs. All parties in the food system must define, support and rally behind a true and well-identified Canadian brand. International consumers must understand what Brand Canada means and have complete faith in that brand. This brand must be supported with data collected by producers and those beyond the farm gate. And these data must allow direct comparison to international standards.

There are many tools available to businesses in the agri-food system; creation of new tools need not be a focus when investing resources. Enhancement of existing tools along with encouragement to actually use these tools is the key to success. Encouragement to use tools will come in the form of both clearer market signals and legislated requirements. Several sectors must move beyond the prevalent sense of rugged individualism. Agri-food in general needs to move beyond value chains to become true food systems. This change will require new thinking and action on the part of producers, producer groups, processors, retailers, exporters and every level of government.

#### **Recommended actions that should be undertaken:**

1. **Brand Canada** must be clearly defined, measured with direct comparison to international standards and communicated to all stakeholders.
2. All parties in the food system must work more closely to ensure **consistency of messages** to Canadian and international consumers. Producer groups need to reach out to trade channel partners (processors/retail) on a regular basis to inform them of progress, listen to market feedback and develop action plans.
3. **Data are key**, and parties should work together to ensure that business owners have tools that allow easy capture and sharing with a clear, legally-binding means of defined access.

4. **We must not reinvent the wheel.** Industry and governments should invest in industry-led, preferably whole farm programs and existing tools that allow easy capture and sharing of data, all in support of the Canada Brand.
5. Producer groups need to **break existing silos to communicate and learn** across sectors for a more cohesive voice and most efficient use of resources.
6. All participants must recognize and effectively respond to the new reality posed by the move to “**Fork to Farm**”, through which the consumer is all important.
7. Risk management **programs offered by government should target** those producers that farm as a business rather than as a lifestyle and funding should focus on those sectors that have a clear vision and a demonstrated willingness to implement change.
8. **Leadership is needed**, preferably from industry but, failing that, from government to avoid partially implemented changes (e.g., traceability). This leadership includes a strengthened extension system, incentives and regulations.
9. Government should ensure that regulatory initiatives are timely and that **negative consequences** be known and mitigated. Regulations should **treat domestic and imported product equally** so as not to disadvantage Canadian businesses.
10. All parties should work together to identify and **prosecute parties guilty of fraud involving food products** as these are a threat to the integrity of brands and the investment made in those brands.

## Appendices:

### Appendix A: Whole Farm Risk Management Toolkit

As part of the Growing Forward 2 Program, the Agri-food Management Institute and Farm Management Canada developed the Whole Farm Risk Management Tool. The tool comprises of an initial quiz consisting of 5 questions;

- Does your farm business rely heavily on one or two people?
- Does your farm business face risks other than weather and market prices?
- Are you concerned about health and safety risks on your farm?
- Is it possible that your succession plan is not clearly communicated and agreed to?
- Is insurance your main tool to manage risk?

If users answer yes to any of the questions, they are directed to a toolkit which includes a risk assessment spreadsheet. On the spreadsheet users are asked to consider each type of risk listed, and then assign a score of 1-5 for the frequency, potential impact and preparedness associated with the risk. Once this assessment is complete the risk assessment converts the data in a risk priority matrix that allows users to see the risks they face and assign priorities for addressing them.

#### Types of Risk to be Considered:

- Personal: Farm safety, health, relationships
- Functional: Production, technology, operations
- Financial: money management, price, margins, real estate
- Business Development: marketing, sales, negotiations, expansion
- Human Resources: Family, employees, advisors, contractors
- Planning; business continuity, business structure
- Legal: contractual, agreement, policy and regulations
- Decision-making: Emotional, attitude, change, contingency
- Environmental: climate, location
- Public: Consumer advocacy, international trade, geo-political

Ultimately the purpose of the Whole Farm Risk Management Tool is to help users develop a contingency plan that can be continually referred to and updated. **For more information, contact Ashley Honsberger at [ashley@takeanewapproach.ca](mailto:ashley@takeanewapproach.ca).**

## Appendix B: AgriShield

### Comprehensive Online Risk Assessment and Risk Management Software

#### What is AgriShield?

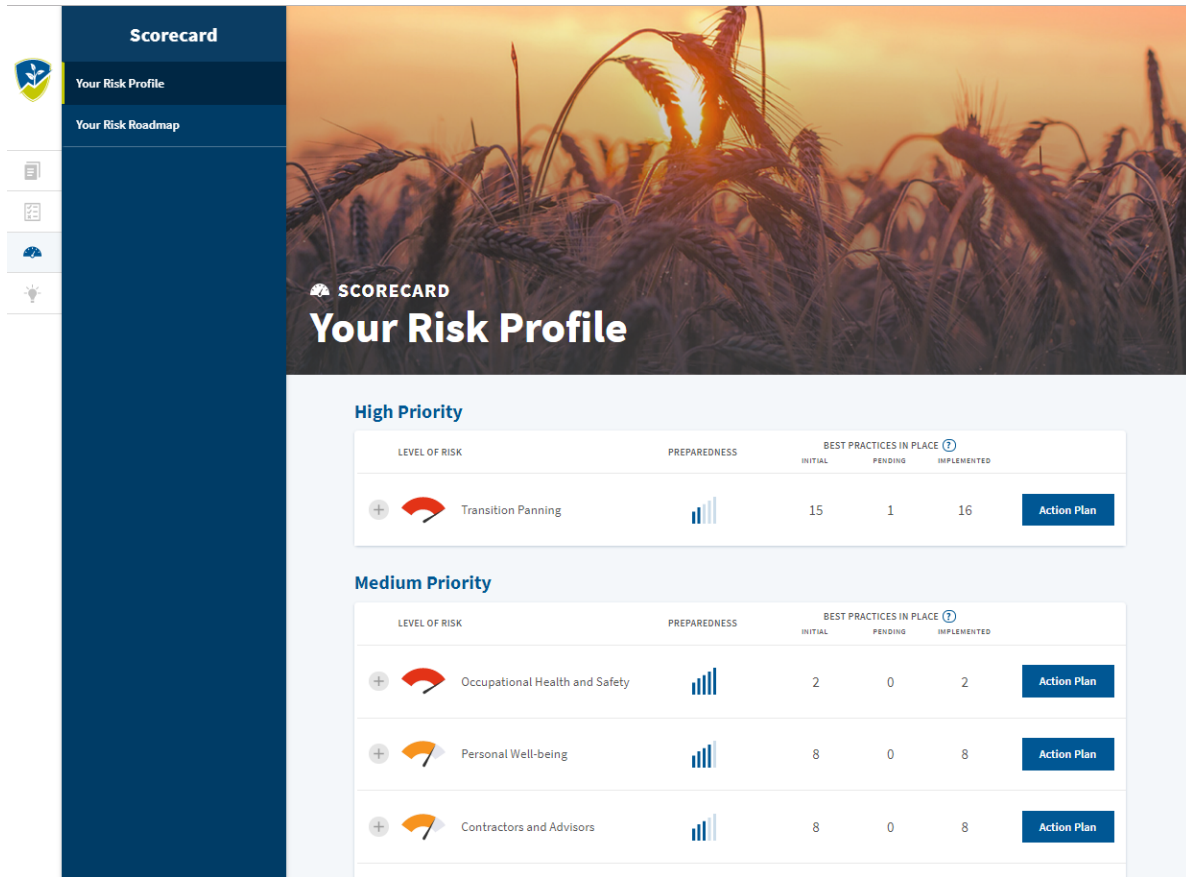
AgriShield is a comprehensive risk assessment and mitigation platform for Canadian farmers developed under the leadership of Farm Management Canada (FMC). It is the first Canadian platform to offer a 360° vision to assess and manage risks on the farm.

This platform will guide farmers through 6 families of risks that they may encounter on their farm. It will also help to leverage existing risk management tools and professional services offered to farmers. With AgriShield®, producers will be able to put an action plan in place to minimize threats and maximize opportunities for their business.

The screenshot displays the AgriShield web application interface. On the left is a navigation sidebar with the AgriShield logo and menu items: Information & Resources, Risk Assessment Module, Scorecard, Action Plan, About Us, About Risk Management, Log Out, and Français. The main content area has a dark blue header with the text "Select a risk category to access related resources". Below this are six icons representing risk categories: People, Finance, Market, Management (highlighted in yellow), Business Environment, and Production. Under the Management category, there is a section titled "Business Strategy & Development" with a list of sub-items: Technology and Innovation, Transition Planning, and Operations. To the right of this list, specific risks are listed: "Unknown or unclear goals and strategic intent", "Inadequate farm business structure and/or governance", "Inadequate performance monitoring and assessment", "Inadequate farm capacity", and "Inadequate strategic planning". An "Access Resources" button is located at the bottom of this section.

Its content is based on FMC's Comprehensive Guide to Managing Risk in Agriculture (2014) as well as on extensive research, including literature reviews and consultations across Canada with industry stakeholders and experts, including farmers, advisors, academia and government.

This project was made possible through funding from the Growing Forward 2 (GF2) AgriRisk Initiative (ARI), a program supporting the research and development as well as the implementation and administration of new risk management tools for use in the agriculture sector.



## Collaborators

FMC developed AgriShield in partnership with the Canadian Federation of Agriculture (CFA), MNP and Groupe AGÉCO; the project team was supported by an Advisory Committee.

## About Farm Management Canada

Farm Management Canada (FMC) is a national umbrella organization for Canadian farm business management activity and champion for beneficial management practices, devoted exclusively to the development and delivery of advanced business management information, tools and resources to position Canada’s farmers for success. **For more information, contact Heather Watson at [heather.watson@fmc-gac.com](mailto:heather.watson@fmc-gac.com).**

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## Appendix C: Canadian Precision Agri-Food (CPAF)

CPAF, formerly known as OPAF (<https://www.opaf.ca/>), is the organization driving a vision of Digital Transformation in the Canadian Agri-Food industry through the effective use of data as a resource. Through the development, implementation and operation of open, shared tools and platforms CPAF will enable participants to take advantage of built-in-Canada solutions designed to support them in the highly competitive global economy in which we operate. Designed as a not for profit organization, CPAF will operate its services for the betterment of its participants and members and for the continued advancement of the Canadian Agri-Food industry.

CPAF is designed to be a not-for-profit organization and will operate its services for the betterment of its participants and members and for the continued advancement of the Canadian Agri-Food industry. CPAF will:

- Provide leadership and tools for the Canadian Agri-Food industry to become a global leader in the use of data.
- Provide leadership with respect to leveraging data assets to address evolving social innovation models.
- Collaborating with Canadian producers to address the anticipated shift in the redistribution of business costs, benefits and risks and new business models. o Protection of Canada's reputation (e.g., monitoring, benchmarking/measuring and reporting of agri-environmental metrics) and protection against the use of Canadian agri-food data in repositories outside Canada;
- Develop and maintain Governance, Risk and Compliance (GRC) policies as related to Agri-Food data and the tools and platforms provided by CPAF;
- Enable access to processes and documentation required for service level agreements, data share agreements and non-disclosure agreements;
- Develop education and standards concerning cybersecurity, data ownership and privacy;
- Support provincial initiatives;
- Maintain equal access to platforms and resource sharing between all partners, nationally and globally.

There are currently two initiatives being executed by CPAF; the Digital Canadian Agri-Food Ecosystem (Digital CAFE) and AgBox. Digital CAFE is a data collaboration and application development platform designed to meet specific needs of the Canadian Agri-Food Industry, addressing requirements of all commodities and all members of their end to end value chains. The vision has been developed over a period of three years through hundreds of business needs gathering sessions. At its core, Digital CAFE is a data collaboration environment on which new applications that leverage the integration of disparate data assets across multiple sources can be

developed. It does not store or retain data; it enables any to any (and many to many) connectivity of participating members through a unified, open API interface that enables simplified, secure, controlled access to exposed data assets. It also provides an open development environment on which applications and analytics tools can be deployed against these data sources. The result of linking these otherwise isolated data sets is a value multiplier for all participants of unknown/unrealized potential.

We envision Digital CAFE as the data collaboration backbone for the Canadian Agri-Food industry – a data highway system supporting and leveraging the Canadian Agri-Food industry’s digital transformation. Participants will be able to access, link to and perform analytics against sources of data otherwise normally outside of their normal business access. The resulting data ecosystem will allow all participants to enhance the value of their offerings to their clients as well as enable development of new products and service offerings to both new and existing clients. It is not open data, but open, controlled, secure access. Data sharing is subject to contracts and agreements between owners and users.

An adjunct to Digital CAFE, AgBox, is also in development. AgBox will provide a unified farm data storage cloud aligned specifically to the needs of the producer (raw data owners). Through its connections to Digital CAFE the data stored on AgBox will be transparently accessible by participants subject to the access rights granted by the individual data owners – for data push and pull.

**For more information contact, Tyler Whale, President of the Ontario Agri-Food Technologies at [twhale@oaft.org](mailto:twhale@oaft.org).**

## Appendix D: SAI Platform and FSA 2.0

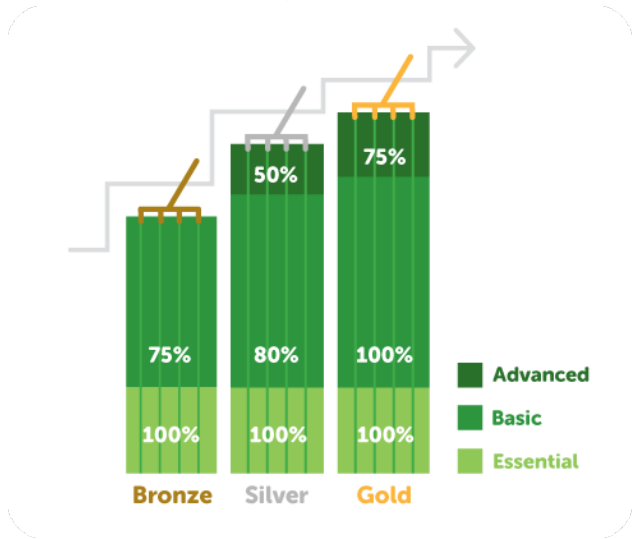
The Sustainable Agriculture Initiative Platform (SAI Platform) was founded in 2002 by Nestle, Unilever and Danone, and today is considered the primary international “... food & drink value chain initiative for sustainable agriculture”. SAI Platform’s aim is to “ensure a constant, increasing and safe supply of agricultural raw materials” that are grown in a sustainable manner. Today SAI Platform has over 90 members, including companies from throughout the food value chain such as AB Sugar, Dawn Meats, Arla, AgroTerra, Ingredion, Tesco, McCain, Kellog’s, McDonalds and Coca-Cola.

One of SAI Platform’s initiatives is the Farm Sustainability Assessment (FSA). FSA is an online questionnaire that is used to benchmark existing standards and programs from all commodities. The purpose of FSA is to be able to benchmark, assess and compare practices across the entire food industry, globally. The FSA consists of 112 questions that cover 17 topics. Each question in each topic is further assigned one of the three pillars of sustainability; people, planet or profit. Each FSA question is either fully covered, partially covered, not covered by the standard being compared, and then is given a weight of critical/ major (100% compliance) or non-critical/ minor (1-99% compliance) depending on the extent to which the standard being compared addresses the FSA question. Once the benchmarking process is complete, a performance level of not yet bronze, bronze, silver or gold is given. Each level represents a different number of essential, basic and advanced requirements that have been met.

As part of the Sustainable Farm and Food Initiative (SFFI), the FSA was used to benchmark standards Canadian standards such as VBP+, Verified Sheep Program, the Canada-Ontario Environmental Farm Plan etc. By using FSA, the SFFI project was able to better understand how select existing practices/ standards and programs compare internationally. This comparison is critical in understanding the gaps and the changes that need to be made in order to be able to access new international markets, as well as to maintain business in current markets as they evolve.

**For more information contact Nick Betts at [nbetts@saiplatform.org](mailto:nbetts@saiplatform.org).**

*Figure 13. Number of Essential, Basic and Advanced Requirements that must be met for each performance level*



## Appendix E: The Sustainable Farm and Food Initiative

The Sustainable Farm and Food Initiative (SFFI), now known as the Canadian Agriculture Sustainability Initiative was initially started by leaders from the Ontario Federation of Agriculture, Christian Farmers, National Farmers Union, Farm and Food Care, Ontario Soil and Crop Association, and President’s Council. With a mission statement outlining that SFFI would “facilitate continuous improvement in sustainability across the entire agrifood industry; ensuring confidence and trust in the consistency, ethics, and quality of Canadian agri-food products”<sup>28</sup>, the initiative engaged in several projects that explored whole farm, whole value chain approaches to sustainability.

SFFI conducted several projects. The first involved conducting interviews and focus groups with a range of stakeholders (e.g. A&W, Nestle, Retail Council of Canada, Ontario Dairy Council, Farms at Work) involved throughout the farm and food sector.

Deloitte was then contracted to conduct a gap analysis report, in order to compare existing standards<sup>29</sup>, such as the Growing Your Farm Profits and Canada-Ontario Environmental Farm Plan, against other existing sustainability standards including Sustainable Agriculture Initiative Platform’s Farm Sustainability Assessment tool. This project highlighted that in fact, existing Canadian programs align well with international standards, and in many areas exceed requirements<sup>30</sup>.

The final project of SFFI was a proof-of-concept project. For this project, SFFI worked with AgSights and Groupe AgEco to design, development and test an SFFI self-assessment sustainability tool specific to the Ontario dairy goat sector. The tool consisted of an online, easily accessible questionnaire divided into three modules.

Recognizing that Canadian products must be marketed globally under a national brand, the elected SFFI farm leaders all agreed to ask the Canadian Federation of Agriculture and Provision Coalition to take the lead on SFFI moving forward. Accordingly, SFFI will become the Canadian Agricultural Sustainability Initiative (CASI) and will be co-managed by the Canadian Federation of Agriculture and Provision Coalition. Moving forward, CASI will continue to explore how data can be managed within an online tool, in order to most efficiently align existing data with standards.

**For more information contact Jon Lazarus at OFA at [jon.lazarus@ofa.on.ca](mailto:jon.lazarus@ofa.on.ca).**

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<sup>28</sup> SFFI. (December 2017). *Sustainable Farm and Food Initiative Final Report*. Retrieved from <https://static1.squarespace.com/static/5a4fc47f1f318d07aef77163/t/5a539e7b652dea1af958a1b3/1515429505021/SFFI+Final+Report+-+January+3+2018.pdf>

<sup>29</sup> Deloitte. (2016). Retrieved from <https://static1.squarespace.com/static/5a4fc47f1f318d07aef77163/t/5a53a455e2c4839dc89a1a2c/1515430999258/OAFT-Final-Summary-Presentation-1.pdf>

<sup>30</sup> Deloitte. Retrieved from <https://static1.squarespace.com/static/5a4fc47f1f318d07aef77163/t/5a53a4300d9297e2e4fa344d/1515430960372/GAPsummary.pdf>

## Appendix F: AgriRisk Project Questionnaire

AgriRisk Management is a very broad topic. We are conducting this study with a focus on risks associated with animal agriculture. This study is funded by AAFC. J. White and Associates Consulting are fielding and conducting the analysis on behalf of AgSights. We would very much appreciate your insights and perspectives on this topic.

The questionnaire asks you to identify risks that you believe are important to sustainable livestock production in Canada and opens the opportunity for your input on potential strategies or tactics to ameliorate risks or take advantage of business risk.

No individual is identified in any responses in the final report.

All responses are confidential.

An honorarium is available to 4H Canada in recognition of your participation in sharing your perspectives and insights upon completion of the study.

The discussion will require about 45-50 minutes of your time.

1 From your perspective, what are the top 4 issues/topics that you associate with risk in animal agriculture.

2 Can you describe the considerations you made in identifying the issues so that it helps me put the priority in context?

3 With respect to each of the issues you identified, how do you rank the issue in regard to priority (Low/Medium/High) for **probability** of impacting animal agriculture.

4 With respect to each of the issues you identified, how do you rank the issue in regard to priority (Low/Medium/High) for **impact** of impacting animal agriculture.

5 Now that we have talked a bit, is there any other risk that comes to mind and how does it rank? (See list of issues).

Use # 5 issue for prompted issues. Not all participants will have a 5th issue.

6 Can you describe some of the considerations you made in identifying the issues so that it helps me put the priority in context?

7 Considering the issues we have prioritized above, please share with me the metrics that are currently available to either benchmark or measure the current risk situation.

8 Looking forward, in assessing risk management issues, which specific metrics should be measured to benchmark changes and verify processes or practices?

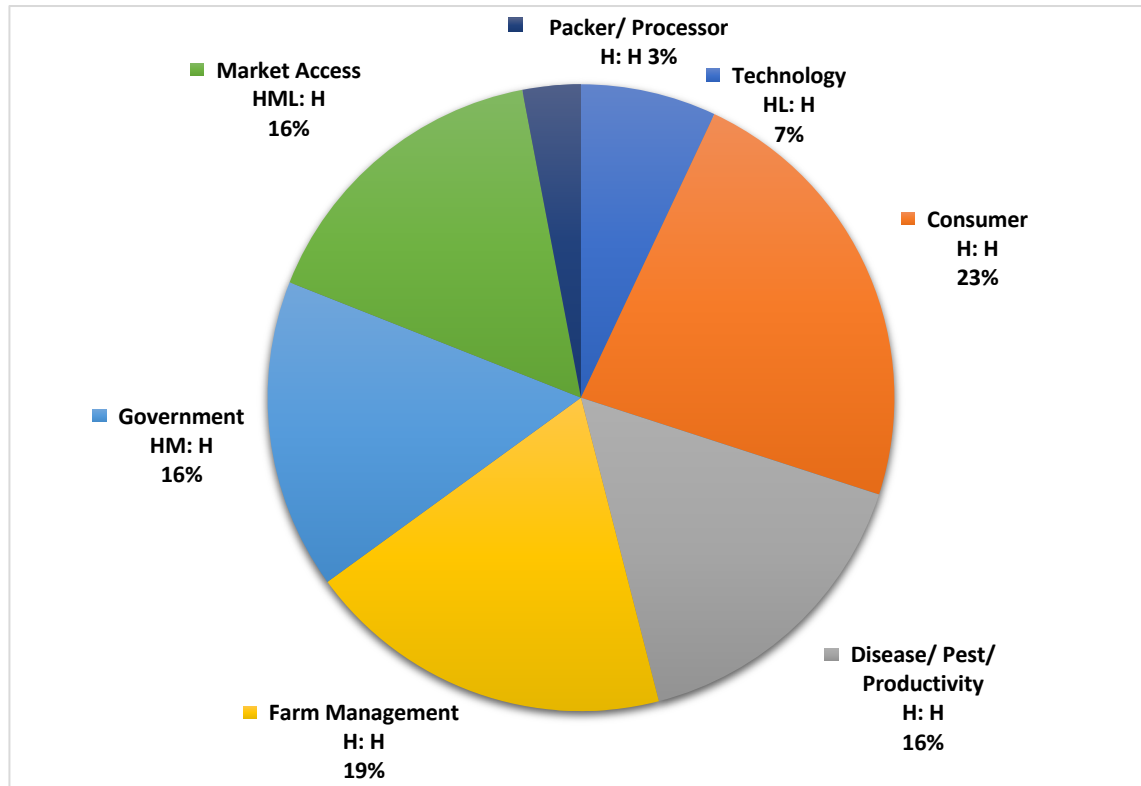
9 Thinking about the areas where risk is **rated High** for either **impact** or **probability**, which professions or institutions can have the biggest impact on making changes occur:

individual producers  
producer associations  
species marketing boards  
local veterinarians  
provincial veterinary association  
consumer advocacy groups  
provincial agriculture ministry  
provincial ministry of environment  
federal agriculture department  
federal trade and foreign affairs  
individual packers  
meat processors association  
financial/banking institution  
others: please specify

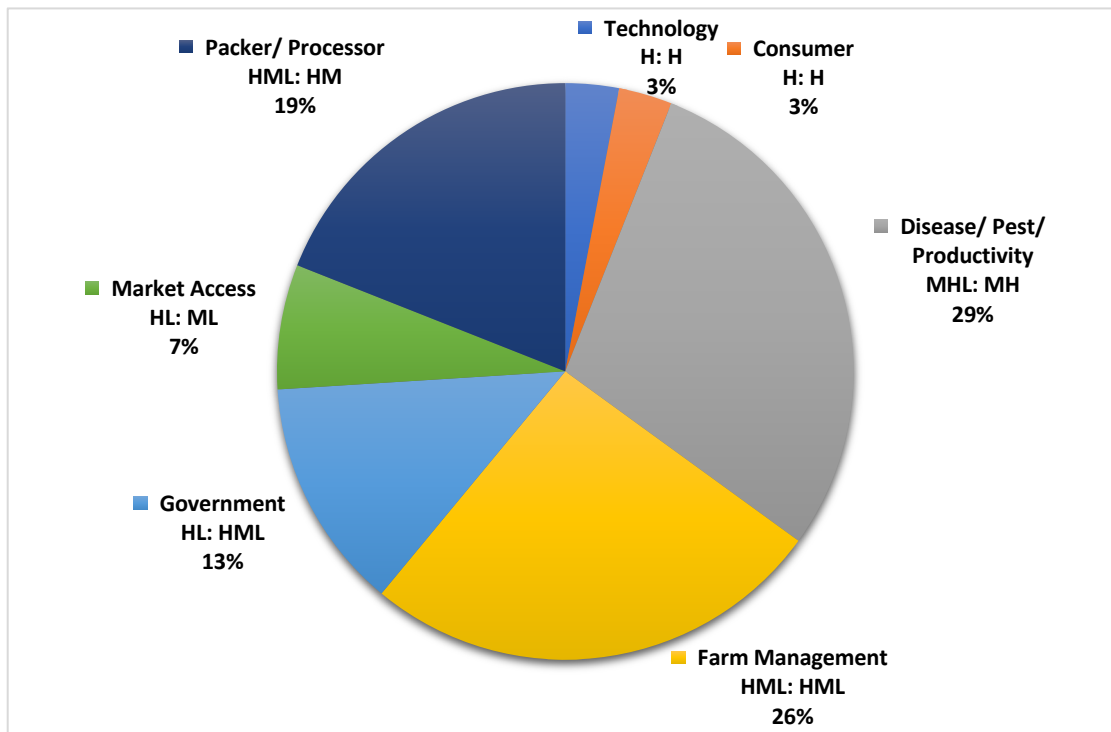
10 Assuming you had the necessary resources, what actions or recommendation would you take to address your key risk issues concerning your segment of the industry.

## Appendix G: Frequency of 1<sup>st</sup> to 5<sup>th</sup> Mentions Across All Participant Groups

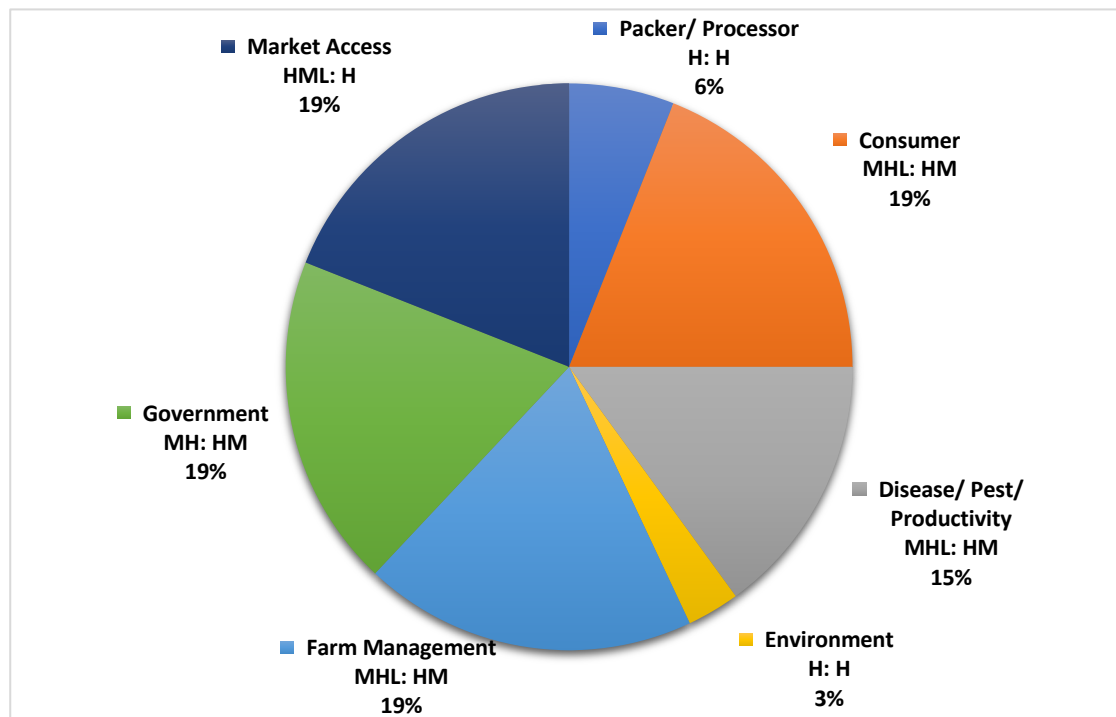
Figure 14. Frequency and Probability/Impact of Issues Mentioned 1st Across All Groups



**Figure 15. Frequency and Probability/Impact of Issues Mentioned 2<sup>nd</sup> Across All Groups**

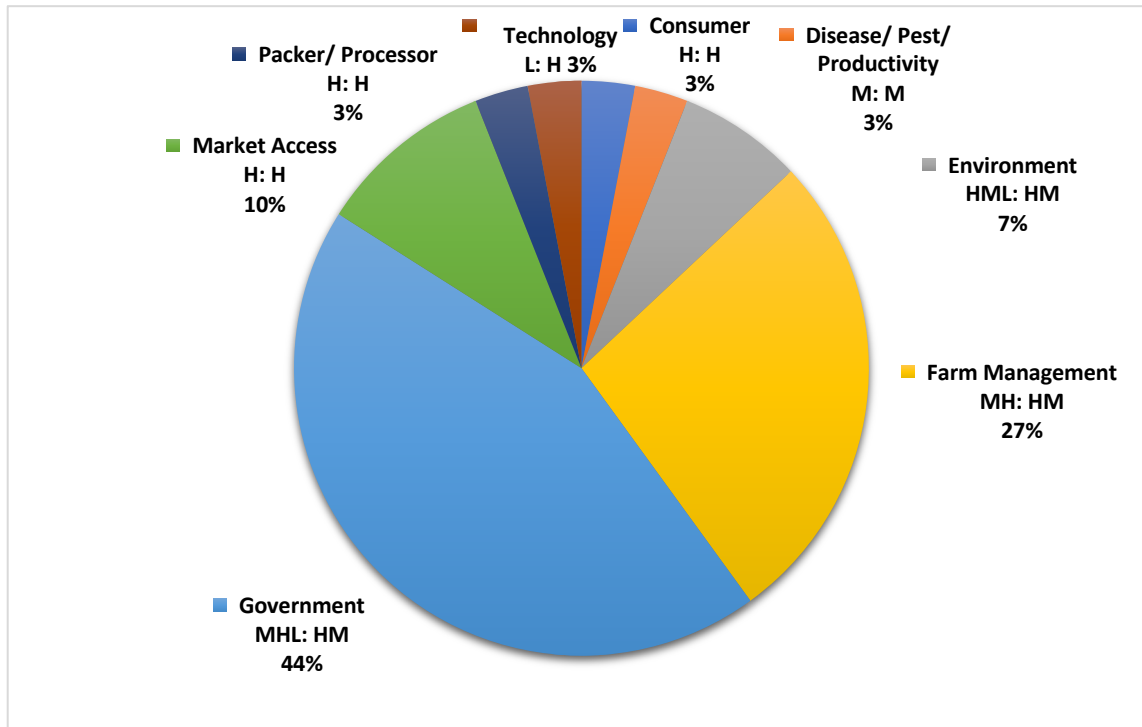


**Figure 16. Frequency and Probability/Impact of Issues Mentioned 3<sup>rd</sup> Across All Groups**

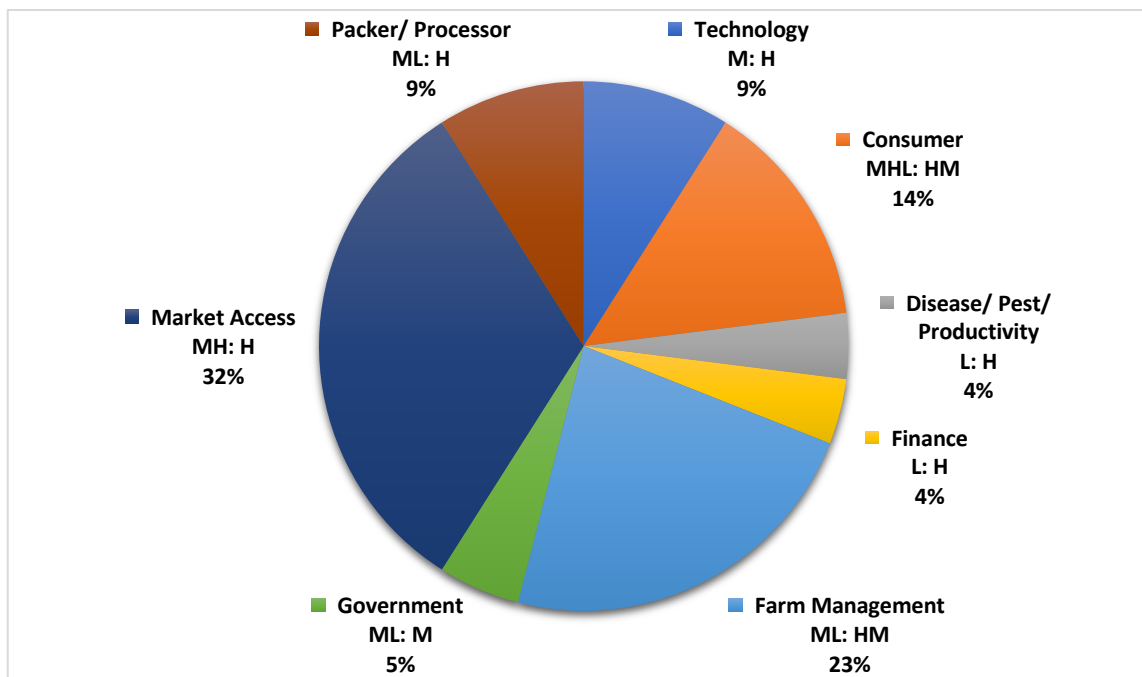




**Figure 17. Frequency and Probability/Impact of Issues Mentioned 4th Across All Groups**



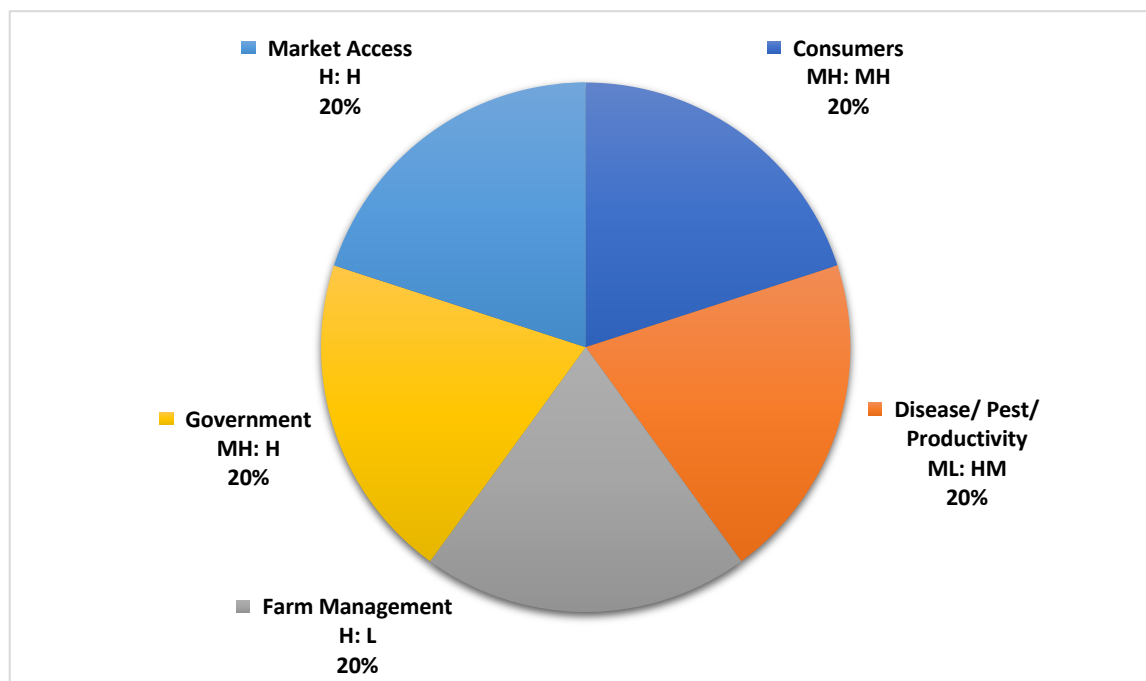
**Figure 18. Frequency and Probability/Impact of Issues Mentioned 5th Across All Groups**



## Appendix H: Apiculture

(N=1)

Figure 19. Frequency and Impact/Probability of Issues Mentioned in Apiculture



Issue	Farm Management
What is working well?	<ol style="list-style-type: none"> <li>1) Federal and Provincial associations have strong membership with reasonably consistent national issues despite the fact that the majority of the hives are in western Canada, and the majority of the bee keepers are in eastern Canada.</li> <li>2) Ontario Tech Transfer Team provides excellent resources of practical knowledge for the industry and has an international perspective of issues.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) New Veterinary Authorization (VA) for access to antimicrobials has big potential to be challenging to implement.</li> <li>2) Determining an evidence-based relationship between neonics, fungicides, virus and mites.</li> </ol>



Why are the actions not working?	<ol style="list-style-type: none"> <li>1) VA regulation will be difficult to implement because veterinarians do not work in apiculture, nor have training in production or diseases.</li> <li>2) Two antimicrobials are approved for use as a preventative for a condition that requires burning the hive and equipment if a colony is infected so the option not to wait to treat until there is a disease outbreak is impractical. Cost of a VA for treatment will be greater than the cost of the medication for many apiarists, resulting in a high risk of no treatment and increased incidence of the disease.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Consider granting an exception for VA in apiculture or some interpretation of regulations that makes access to the antimicrobial practical in terms of disease prevention and distribution.</li> <li>2) Continue to support education programs for producers.</li> <li>3) Continue to invest in research to clarify the roles singularly and in combination with neonics, fungicides, virus and mites.</li> </ol>

Issue	Government
What is working well?	<ol style="list-style-type: none"> <li>1) Good collaboration between government and industry. Active listening to the concerns about neonicotinoid effects on bees and their ecosystem.</li> <li>2) Changes in the labelling of Product of Canada regulation helps protect food fraud from imported honey that is bottled/blended here.</li> </ol>
What is not working well?	<ol style="list-style-type: none"> <li>1) AMU regulations will require dialogue to adapt to a unique industry sector.</li> </ol>
Why are the actions not working?	<ol style="list-style-type: none"> <li>1) Recent changes in regulations and timing to respond to the implications of the new regulations.</li> </ol>
Recommendations	<ol style="list-style-type: none"> <li>1) Continue to have constructive conversation with regulatory and informed association representatives.</li> </ol>



Issue	Disease/Pest/Productivity
What is working well?	Many risks are well known (e.g., mites, neonics, viruses, nosema, erratic weather).
What is not working well?	Determining the sole impact of neonics in bee health.
Why are the actions not working?	Incomplete scientific knowledge concerning a complex issue with the class of chemistry.
Recommendations	<p>Invest in research that passes peer review on the neonic toxicity issue and the interrelationships with fungicides, mites, virus and other challenges to bee health.</p> <p>Invest in research to provide new approaches in controlling pests and disease.</p> <p>Manage Canada's import policy of bees and honey products to prevent entry of new pathogens and pests.</p>

Issue	Market Access
What is working well?	1) Local honey is recognized and in demand by Canadian consumers.
What is not working well?	1) Resources to ensure tracking and testing for contaminants in all imported honey.
Why are the actions not working?	1) Honey imports from China, India and Argentina where mislabelling is a relatively common practice needs to be addressed.
Recommendations	1) Ensure adequate CFIA resources to monitor imports and deal with infractions quickly.



Issue	Consumer
What is working well?	1) Public awareness about bees and their impact on the pollination for food plants. 2) Good demand for Canadian honey products.
What is not working well?	1) Honey imports from China, India and Argentina where mislabelling is relatively common practice needs to be addressed.
Why are the actions not working?	1) Continue education about health merits of honey to the consumer. Ensure honey products do not get linked to sugar's negative image. 2) Weak understanding at all levels of government and public on importance of healthy sustainable environment with the honey bee as the sentinel.
Recommendations	1) Industry led awareness and education programs with retail/distribution channel supporting Canadian honey.



## Appendix I: Acronyms

AAFC	Agriculture and Agri-Food Canada
ACFA	Alberta Cattle Feeders Association
ADG	Average Daily Gain
AI	Avian Influenza
AMI	Agricultural Management Institute
AMR	Antimicrobial Resistance
AMU	Antimicrobial Usage
ASRA	Le Programme D'assurance Stabilisation des Revenus Agricoles (Farm Income Stabilization Program)
BSE	Bovine Spongiform Encephalopathy
CAGR	Compound Animal Growth Rate
CASI	Canadian Agriculture Sustainability Initiative
CCA	Canadian Cattlemen's Association
CETA	Canada European Trade Agreement
CFC	Chicken Farmers of Canada
CFG	Canada's Food Guide
CFIA	Canadian Food Inspection Agency
CFIA	Canadian Food Inspection Agency
CIPARS	Canadian Integrated Program Antimicrobial Resistance Surveillance
CPAF	Canadian Precision Agri-Food
CPC	Canadian Pork Council
CPIP	Cattle Price Insurance Program
CPTPP	Comprehensive Progressive Trans-Pacific Partnership Agreement
CQA	Certified Quality Assurance
CRSB	Canadian Roundtable for Sustainable Beef
CSF	Canadian Sheep Federation
CVMA	Canadian Veterinary Medical Association
CVSP	Canadian Verified Sheep Program
DFC	Dairy Farmers of Canada
DHI	Dairy Herd Improvement
FE	Feed Efficiency

FMD	Foot and Mouth Disease
FPT	Federal, Provincial, Territorial
HC	Health Canada
MERCUSUR	Central and South America Trade Agreement
MIA	Medically Important Antimicrobial
MNR	Ministry of Natural Resources
MUMS	Minor Use and Minor Species Animal Health Act
NAFTA	North American Free Trade Agreement
NGO	Non-governmental Organization
OIE	Office of International Epizootics
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OPAF	Ontario Precision Agri-Food
OSPCA	Ontario Society for the Prevention of Cruelty to Animals
OUI	Own Use Import
PED	Porcine Epidemic Diarrhea
RMP	Risk Management Program
RWA	Raised Without Antibiotics
SFFI	Sustainable Farm and Food Initiative
TB	Tuberculosis
VA	Veterinary Authorization
VBP+	Verified Beef Production Plus
WHO	World Health Organization
WTO	World Trade Organization
CFIA	Canadian Food Inspection Agency
FPT	Federal, Provincial, Territorial
OPAF	Ontario Precision Agri-Food
CPAF	Canadian Precision Agri-Food
SFFI	Sustainable Farm and Food Initiative
CASI	Canadian Agriculture Sustainability Initiative

## **Appendix J: About the Authors**

### **Jim White, MSc**

Jim is the Principal in J White and Associates Consulting. He couples natural leadership, management, consulting and communication abilities with marketing and business development expertise. He has enjoyed a long career in highly regulated industries reliant on clearly defined distribution channels. Jim emphasizes the importance of branding and results to deliver added value to clients and shareholders in the animal health, biotechnology and pet-food markets.

With a career that spans both the Canadian and international landscape, Jim has had the opportunity to work in vice-president positions with companies such as AGDATA Ltd., Adculture Group Inc., Novartis and BioStar. He also served in management positions for companies such as VTech Laboratories Inc. and Rhone-Poulenc.

Jim served on the board of directors of the Canadian Animal Health Institute during 2009-2012, and on the board of directors of AgSights (formerly BIO) during 2012-2016.

### **Gord Surgeoner, OOnt, PhD**

Seconded from his position as Professor at the University of Guelph in 1999, Gord became the President of Ontario Agri-Food Technologies, a non-profit organization consisting of members from farm associations, universities/colleges, industry and regional governments. The organization focuses on ensuring that Ontario producers have access to the latest technologies to compete globally and to develop new market opportunities, many of which are beyond food.

In September 2005, Dr. Surgeoner was invested with the Order of Ontario in recognition of his significant contribution to Ontario's agri-food sector. Gord is a strong advocate for Canadian agriculture, the Canadian regulatory system and the opportunities Canada has in a global marketplace. Biotechnology Innovation Organization (BIO) selected Dr. Gord Surgeoner for their Leadership and Legacy Award in 2017, for outstanding and lasting contributions in the field of Industrial Biotechnology and the bio-based economy.

Now in semi-retirement, Gord continues to advocate on behalf of Canadian agriculture as an Associate with OAFT, through various Board positions, and working with agriculture producers and food processors on sustainability initiatives, including the Sustainable Farm and Food Initiative.



## Appendix K: About AgSights

AgSights was formed as a member cooperative in 1993 and has evolved to meet member needs with a clear focus on easy data capture both on-farm and beyond the farm gate.

The Go360 bioTrack system is fully mobile and can be used by farmers/ranchers on any smart phone, even out of internet range to capture virtually any data point, including photos, on many species of animals, groups of animals or locations. Traceability is embedded and the system links to many others to make data movement (in and out) easy. Beef, sheep and goat producers can access across-breed genetic evaluations through Go360 bioTrack with no added data management required. The system was a key component of the Sustainable Farm and Food Initiative (SFFI) proof of concept project that documented sustainable production.

The bioLinks system makes inventory and sales easy for agri-food businesses and also enables small to medium sized protein-processing businesses to capture data on carcasses and cuts and tie this all back to an animal. Using both systems, you can connect individual retail cuts to a complete animal history. This full story on a product can support production claims and also document the story of a product.

Both systems were recently recognized with Premier's Awards for Excellence in Agri-Food Innovation and Go360 bioTrack was the recipient of a 2017 SREDA Ag-Harvest Award for Agricultural Innovation.

One of the intentions of this study was to scan the horizon to identify high-priority existing risks as well as emerging risks in order to provide AgSights with recommendations on how they can best help meet the changing risk management needs of their members. Using the analysis and findings of this study as a guide, AgSights enhanced their multi-species livestock management system Go360 bioTrack. This is an example of building on investment to date, to enable livestock producers to capture data easily in order to better manage their businesses, including the risks that exist, and to prepare for those that are emerging. Enhancements included:

- ✓ Added Mapping features
  - Implement an easy to use mapping tool to move animals and track inventory
- ✓ Feed and medicine inventory and management
  - Auto tracking of inventory volumes to better track use of antimicrobial products
- ✓ Build in user-defined third-party access
  - Easy, remote access for veterinarians and auditors needing access to farm records
- ✓ Ability to generate reports of inventory by location for specified dates
  - More accurate tracking of animals of interest and their contemporary groups
- ✓ Enhanced data capture for visitor events
  - More accurate data relative to biosecurity

**You can learn more about AgSights at [www.agsights.com](http://www.agsights.com) or contact Mike McMorris at [mmcmorris@agsights.com](mailto:mmcmorris@agsights.com).**