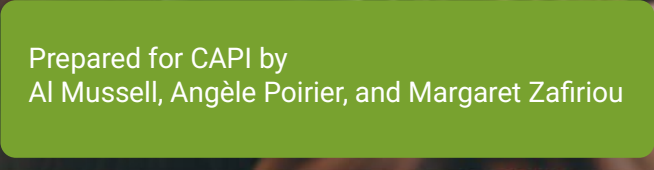# CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

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Forces Impacting Animal Agriculture in Canada: A Synthesis

Prepared for CAPI by
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Research Report

CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

Grand River Agricultural Society **UFA** **Canadian Cattle** Association **LRIC** LIVESTOCK RESEARCH INNOVATION CORPORATION **DAIRY FARMERS OF CANADA**

Note from CAPI

CAPI undertook a White Paper initiative to provide a better understanding of the effects of animal agriculture, from the broadest of perspectives, so that an audience involved in the policy dialogue – but not necessarily ensconced in animal agriculture – could identify and understand the essential strategic elements in a holistic manner, and so that a database and accompanying analyses could allow the industry to formulate proactive strategy more easily.

To facilitate this, CAPI developed an extensive framework based on the UN TEEB initiative ("The Economics of Ecosystems and Biodiversity"). This framework was chosen because it had sufficient breadth and a balance sheet-type of structure that accounted for stocks and flows, as well as multiple dimensions through which to evaluate outcomes: environmental, human health, economic, and social. It allowed the capital stocks deployed in animal agriculture to connect with flows of outputs – farm products and wastes – which could then be organized into supply chain discussions.

This generated an extensive White Paper report, well over 150 pages in length. It involved a literature review, data analysis and visualization, and interpretation, leading to a SWOT analysis (strengths, weaknesses, opportunities, and threats). In so doing, the White Paper attempts to strike a balance between the granular detail of original research and specific mechanisms and relationships with high-level overview and strategic perspective.

The White Paper serves as the due diligence document from which this report is based. As such, this report draws from the White Paper, but it stands alone in its character, interpretation, conclusions, and thematic recommendations.

Key Takeaways

- Animal agriculture in Canada is a complex and interconnected system, and while there are differences, many challenges and opportunities are shared. Its value and impact cannot be measured with simple metrics and requires a comprehensive approach.
- Improving economic, environmental, and social sustainability across animal agriculture requires common solutions, including growth-oriented policies, investments in research and innovation and in transportation and infrastructure, and an enhanced data framework.
- Risks facing animal agriculture, such as disease, loss of grassland, markets, and extreme weather, are increasing and require greater focus and innovative policy solutions.
- Export-oriented and domestically focused value chains both have growth opportunities, but each faces unique barriers. A constructive, strategic dialogue is needed on how to unlock each value chain's full potential.
- Canadian animal agriculture has among the lowest emissions intensities in the world. Policies that integrate sustainability, food security and growth can help meet climate targets and SDGs, and build Canada's comparative advantage.

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Acronyms and abbreviations

CETA, CPTPP	Canada-EU Comprehensive Economic and Trade Agreement, Comprehensive and Progressive Agreement for Trans-Pacific Partnership
UN SDG	United Nations Sustainable Development Goals
ASF	African Swine Fever
EU	European Union
EG&S	ecological goods and services

Introduction

Animal agriculture in Canada is a complex, interrelated, and dynamic system that defies simple metrics. Through consultations with stakeholders and a White Paper process, the Canadian Agri-Food Policy Institute (CAPI) was able to delve deeper into the animal agriculture value chain and system in Canada, developing a broad overview as well as a description of the strengths, weaknesses, opportunities, and threats it faces. This *Research* Report draws from the detail on animal agriculture systems developed in CAPI's *White Paper on Animal Agriculture in Canada and its Regions.*

To help assess this complex system, the White Paper adopted a framework for assessment that described this system, accounting for the capital stocks employed in Canadian animal agriculture – natural capital, human capital, physical/created capital, and social capital – and the flows that lead to the outputs and impacts of animal agriculture on the economy, the environment, and society. This framework is based on The Economics of Ecosystems and Biodiversity framework (TEEB, 2018), customized for this assessment of animal agriculture in Canada (Figure 1).

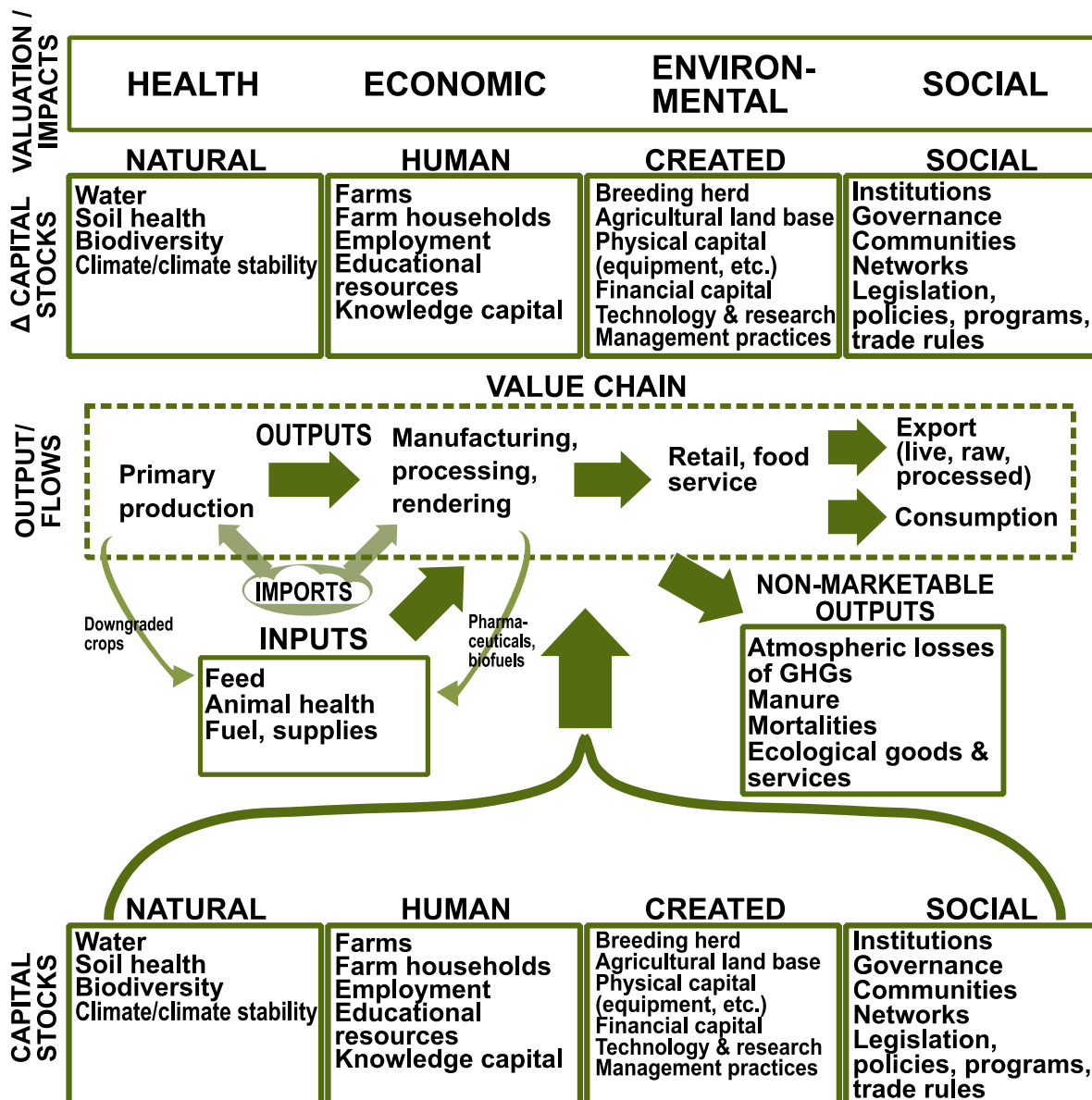**Figure 1. Framework for assessing animal agriculture in Canada**

Image created internally. Based on the TEEB framework (TEEB, 2018).

Forces Impacting Animal Agriculture in Canada: A Synthesis

The data and information compiled within the framework allow for a detailed, comprehensive baseline of the size and scope of animal agriculture in Canada. Secondly, it allows for a visual and logical basis to trace the impacts of pressures at specific points in the system, from demand, policy changes, competition, disease, weather events, and climate change.

The initial capital base defines the nature and capacity of the system: the soils/land base, climate, water, and biodiversity, or natural capital. Human capital includes the farmers and workforce, educational institutions, and high-quality personnel working in research and across the system. Created capital includes breeding animals, farmland, equipment and financial assets, technology, and management practices. Social capital includes the relationships, networks, governance bodies, and institutions that frame interactions, cooperation, and the legal and policy/standard-setting framework.

From these capital stocks are driven animal-based farm product outputs, such as livestock marketings, as well as non-marketable product flows such as manure, GHG emissions, and ecological goods and services. The marketable outputs flow into the value chain, represented by technical coefficients that include productivity measures such as feed conversion ratios and emissions intensities. Some outputs flow back down as inputs into animal agriculture in the form of pharmaceuticals and biofuels. The marketable outputs (products) move downstream in the value chain where they are exported, or combined with processing inputs, and are processed into animal-based foods and other industrial products, then sold domestically in retail or foodservice, or exported. The nature of the flows of animal-based products and outputs influences the change in the level of capital stocks. If flows exceed carrying capacity, ending period capital stocks will decrease; conversely, they can increase if flows are below carrying capacity.

Finally, the top tier of the framework in Figure 1 reflects the health, economic, environmental, and social impacts of animal agriculture in Canada. Many of these effects are positive but others present challenges. These include regulatory burdens, lagging research and development in Canada, and opportunities for more reduction in emissions intensities in animal agriculture.

Figure 2. Infographic: Animal agriculture in Canada
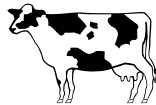
ANIMAL AGRICULTURE IN CANADA

CAPI ICPA

FOUNDATION HERD

3.6 M
BEEF COWS[1]

0.9 M
DAIRY COWS[1]

1.2 M
SOWS & GILTS[1]

7.9 M
LAYER AND BROILER BREEDERS[2]

💲 **90 BILLION** in sales in 2022[3]

164,000 direct jobs (2021)

394,000* indirect jobs (2020)[4,5]

*Product of $33.6B (farm cash receipts) multiplied by 11.718 jobs per $M (total economic multiplier)

FARMERS are the most trusted people in the food system
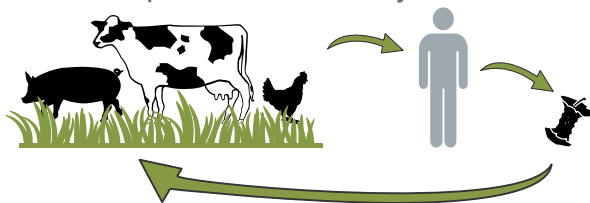
43% Farmers
35% Scientists
21% Grocery stores

High level of trust (8+ out of 10)[6]

ANIMALS ARE UPCYCLERS

of crop residues, human food scraps, and plants inedible by humans

Canada is a LOW-EMISSIONS producer of animal products[7]

	N.AM.	AUS+NZ	S.AM.	W.EUR.
kg CO2e/kg beef protein	109.93	157.63	365.04	152.02
kg CO2e/kg pork protein	37.72	52.18	42.86	37.88

Sources:
1. Statistics Canada Livestock Survey: Jan. 1, 2023.
2. Census of Agriculture, 2021.
3. Statistics Canada, 2023. "Farm cash receipts, annual" and "Manufacturers' sales, inventories, orders and inventory to sales ratios"
4. Agriculture and Agri-Food Labour Statistics Program, 2023. "Employees in the agriculture sector, and agricultural operations with at least one employee, by industry"
5. Statistics Canada, 2023. "Input-output multipliers"
6. Canadian Centre for Food Integrity public trust survey, 2022
7. FAO. (2022). "GLEAM v3 Dashboard." [2015 data].

Image created internally.
Data sources: (Agriculture and Agri-Food Labour Statistics Program, 2023; Canadian Centre for Food Integrity, 2022; Census of Agriculture, 2022b; FAO, 2022; Livestock Survey, 2023a, 2023b; Monthly Survey of Manufacturing, 2023; Statistics Canada, 2023a; Supply, Use and Input-Output Tables, 2022).

Key Findings

CAPI drew on scientific and industry literature, public statistics, and on insights from consultations with a broad group of industry and government experts in developing the White Paper. The major findings are presented below.

1. **Animal agriculture is a major contributor to Canada's economy, environment, society, and population health.**

Canada's meat, poultry and egg, and dairy producers and processors contribute significantly to the Canadian and provincial economies, to the profitability of Canadian farmers, ranchers and other players in the chain, as well as to the health and well-being of rural communities and Canadian and international consumers. In 2022, animal agriculture directly generated $89.5 billion in sales: $33.6 B from livestock farm cash receipts, and $55.9 B from meat, poultry, egg and dairy product manufacturing shipments (Monthly Survey of Manufacturing, 2023; Statistics Canada, 2023a). It employed over 164,000 people and generated GDP of $14.7 billion (Agriculture and Agri-Food Labour Statistics Program, 2023; Statistics Canada, 2023b). If the indirect and induced multiplier effects of this economic activity are added, animal agriculture contributed another $32.4 billion in GDP and a further 394,000 jobs (Supply, Use and Input-Output Tables, 2022). This economic activity is founded on highly efficient and well-aligned supply chains and well-established institutions.

Figure 3. Economic impact of animal agriculture
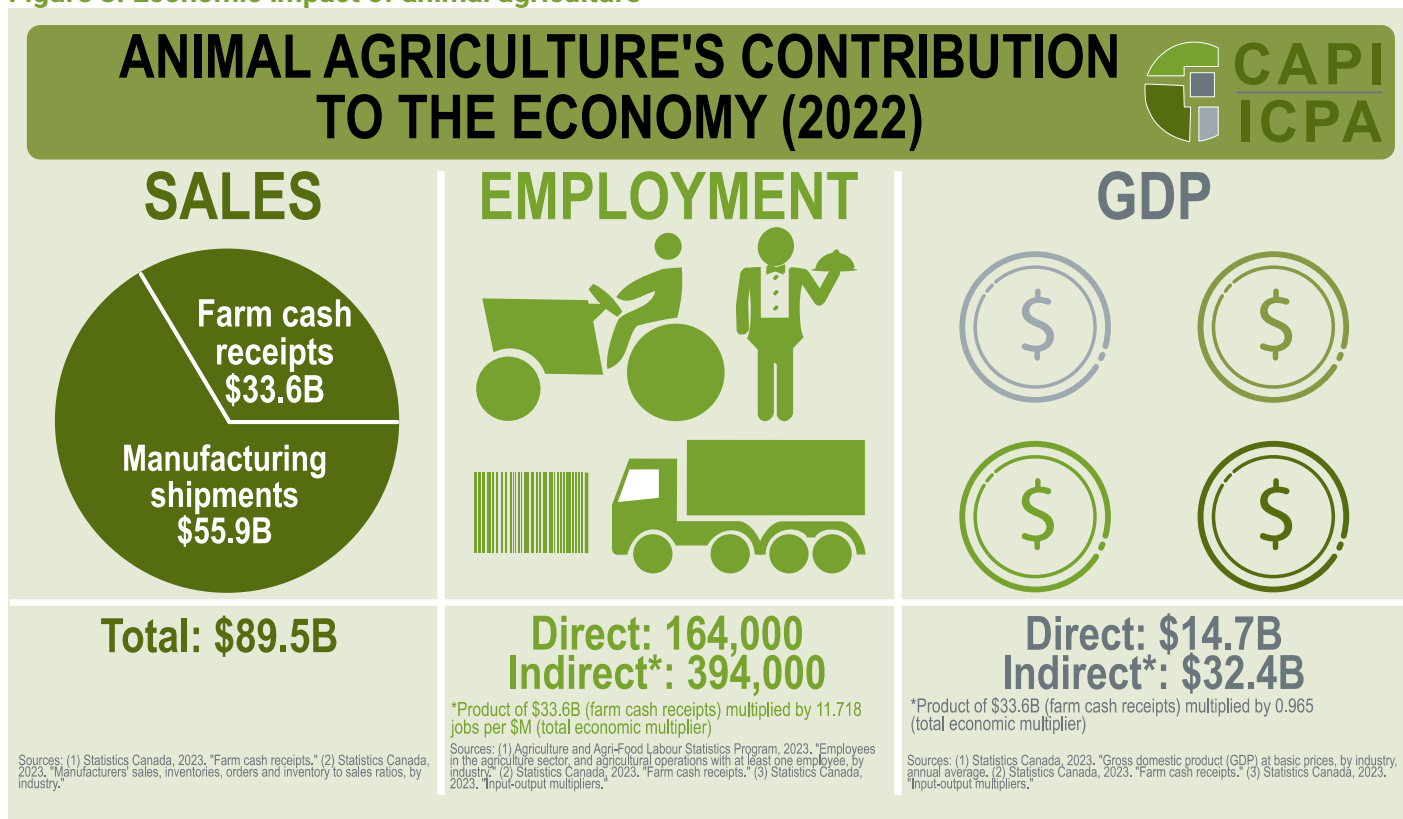
Graph created internally.
Data sources:
(1) (Statistics Canada, 2023a). *Farm cash receipts, annual (x 1,000)* [dataset]. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210004501.
(2) (Monthly Survey of Manufacturing, 2023). *Manufacturers' sales, inventories, orders and inventory to sales ratios, by industry* (Table 16-10-0047-01) [dataset]. https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1610004701.
(3) (Agriculture and Agri-Food Labour Statistics Program, 2023). *Employees in the agriculture sector, and agricultural operations with at least one employee, by industry* (Table 32-10-0215-01) [dataset]. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210021501.
(4) (Supply, Use and Input-Output Tables, 2022). *Input-output multipliers, detail level* (Table 36-10-0594-01) [dataset]. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610059401.
(5) (Statistics Canada, 2023b). *Gross domestic product (GDP) at basic prices, by industry, annual average* (Table 36-10-0434-03) [dataset]. https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3610043403.

Because livestock farms and meat, poultry, egg, and dairy processors are distributed across the country, they support rural economies and livelihoods and contribute to the social and cultural fabric of regions of the country that might not otherwise attract other industry. Extensive networks and institutions have been created in animal agriculture that foster trust and facilitate relationships along supply chains and provide legal and governance frameworks. This includes government policies and regulations, as well as industry and marketing associations, standard-setting bodies, educational institutions and knowledge transfer agencies, along with environmental and conservation groups. Animal agriculture also contributes to food security and food access in regions where these products might not otherwise be accessible or affordable, such as in Canada's northern communities.

Animal-based foods are sources of high-quality protein and of certain readily absorbable and bioavailable micronutrients which are more easily obtained from animal-based foods than from plant-based foods (Moughan, 2021; Ominski et al., 2021; Smith et al., 2022). An inadequate intake of some of the major micronutrients, especially during childhood, pregnancy, and by older adults, can lead to health problems that affect growth and cognitive function. Nutrient deficiencies that lead to stunting, anaemia, osteoporosis, and brain dysfunction can be prevented by consuming animal-based foods which contain amino acids, iron, calcium, and zinc.

Consumption of animal-based foods has also been linked to some adverse health outcomes including metabolic disease and cardiovascular diseases (Abete et al., 2014; Chen et al., 2012; Sun, 2012; Sunha et al., 2009; Etemadi et al., 2017; Afshin et al., 2019; as cited in OECD, 2020). The understanding of these effects continues to evolve (see Zeraatkar et al., 2019; Vernooij et al., 2019; Han et al., 2019; as cited in OECD, 2020). As the global population continues to grow and as the demand for more nutrient-dense foods increases, opportunities for Canadian animal agriculture will continue to emerge.

Animal agriculture has extensively shaped landscapes and the environment. Livestock manure is an important source of crop fertility that is recycled back to crops. But excess nitrogen and phosphorous in manure can contaminate waterways with runoff and leach into ground water. Methane is a potent greenhouse gas emitted by ruminants and from manure in storage. Conversely, Canada has extensive pasture and grasslands that harbour significant wildlife habitat, support biodiversity, and store significant carbon. The economics of pasture and grasslands are anchored by grazing farm animals. Canadian livestock producers have made significant progress over time, reducing their GHG emissions intensity and reducing harmful run-off through regulations and beneficial management practices.

However, challenges to Canada's capacity exist from labour shortages, an aging farm population, and policies and regulations that impede future growth.

2. Canada has a comparative advantage in animal agriculture.

Canada benefits from an abundance of natural resources that support animal agriculture. Availability of fresh water, healthy soils, natural grasslands, permanent pastures on marginal land, and a temperate northern climate with regional variation are significant aspects. Canada's agricultural land base of 154 million acres facilitates spatial dispersion of animals and mitigation of animal disease spread, especially in western Canada, which supports significant capacity. In turn, Canada's arable land allows for a comparative advantage in low-cost feed grain production.

Canada has a competitive advantage in livestock production compared to competing regions. Transportation economics and animal feed conversion ratios imply that animals move toward feed (not the other way around), and Canada is a low-cost producer of feed grains. Canada has significant natural grasslands, pasture, and marginal lands that can be grazed by ruminants to transform (upcycle) forage and grass crops on this land. Farm animals also make use of by-products from the waste streams of agriculture and food processing that are not useable in human food and would otherwise be wasted or sent to landfill (White & Hall, 2017). This includes downgraded grains and feedstuffs, rendered products, food waste, and crop residue, in a truly circular fashion. In so doing, farm animals upcycle inedible feedstuffs that are less nutrient dense into edible, more nutrient dense, and more digestible food products, containing nutrients inaccessible from other sources (Mottet et al., 2017). At the same time, many of the by-products of animal agriculture production provide more than just food, but provide

fats for biofuels and cosmetics, materials for textiles, bonemeal for fertilizer, and chemicals for pharmaceuticals, with very little waste.

Canada is heavily invested in animal agriculture, with almost $190 billion in assets in 2021 at the farm level alone (Farm Financial Survey, 2023). Also, there have been investments in logistics, transportation infrastructure, input suppliers, and processing facilities. Canada boasts some world class universities and colleges and there have been major investments in public and private research, research centres and innovation clusters, commercialization centres, and smart farms. There are eight university faculties of agriculture with departments of animal science, and five university colleges of veterinary medicine. Canada's meat processing industry is highly concentrated with large foreign-owned multinationals accounting for a large share of sales (Rude, 2020). Business investment in animal agriculture and meat processing has been relatively sluggish over the past decade (Thompson et al., 2020).

Hence, rising costs of labour, regulatory burden, interprovincial trade barriers, and low business capital investment across animal agriculture threaten to limit Canada's future animal agriculture production capacity.

3. **Animal agriculture in Canada has made significant productivity and efficiency gains over time, but newly emerging challenges will require continued investments in innovation.**

Canadian animal agriculture operates at a global standard. It has managed impressive improvements in productivity, quality, and efficiency metrics related to feed conversion, output relative to the size of the breeding/foundation herd, and GHG emissions relative to production (GHG emissions intensity): Canada is one of the most GHG emissions efficient animal producers in the world (Legesse et al., 2015; Vergé et al., 2008). These are supported by past investments in science, new knowledge, innovation, and human capital. Animal agriculture also benefits from a well-connected supply chain structure and industry and marketing associations (*e.g.*, Canadian Roundtable for Sustainable Beef, Dairy Farmers of Canada, et cetera), and other institutions that engender trust, help avoid or resolve disputes effectively, and promote best management practices and marketing of safe and sustainable products. Canada is also relatively free of foreign animal diseases that would limit trade, hamper productivity improvements, and impact animal welfare.

At the same time, there are risks and threats to animal agriculture that will require ongoing innovation and investments in R&D and human capital. The pressure to produce more and better, at premium quality, with less, to preserve land and resources, reduce environmental impacts, and increase productivity to meet growing global protein demands is ongoing. Productivity growth can be undercut by protectionism and other countries' domestic support. Canada's regulatory system, which is respected globally, can be slow in approving and making available new animal health products. This is costly as new products end up being introduced in competitor markets first, creating a competitive disadvantage and weakening incentives for new product development in Canada. Productivity growth excessively focused on a narrow set of productivity traits, at the exclusion of animal function, welfare, and environmental impacts also carries the danger of biological system overload, and the associated concerns with animal welfare and environmental harm.

Canada risks falling behind in terms of responding to emerging challenges facing Canadian animal agriculture without an enabling environment that encourages investments and flexible regulations that promote innovation.

4. **Canadian animal agriculture faces remarkable opportunities but also challenges in the global marketplace.**

The international market upon which Canadian pork and beef rely has become less friendly for a small economy that is a net exporter of agri-food products like Canada, which ranked 12th and contributed 2% of global net exports in 2021 (FAOSTAT, 2021; internal calculations). This environment is evident in the non-functional WTO dispute settlement appeals body, and in the increase in concerns raised before the WTO (World Trade Organization, 2023). More generally, protectionism is on the rise, with investments in animal agriculture and food processing dependent upon access and a pricing model based on international markets, making these investments structurally riskier.

At the same time, opportunities exist as global demand for animal-based foods continues to grow. The USDA recently projected that global per capita consumption of calories from animal products will increase by 29 percent by 2050 compared with a 2011 baseline, given a global population of 10 billion people (Sands et al., 2023). Meanwhile, the OECD projects worldwide poultry, pork, beef, and sheep meat consumption growing by 15%, 11%, 10%, and 15% respectively by 2032 (OECD-FAO, 2023, p. 188).

Many of Canada's international competitors are facing headwinds from extreme weather, animal disease, policies, and geopolitical conflicts that are limiting their potential for future animal agriculture production and exports. In the global context, Canada is not a large producer of animal agriculture products, but it is a comparatively large exporter with extensive scale beyond domestic needs, especially in pork and beef. Domestically scaled industries, such as dairy, poultry, and eggs, are also sensitive to global trade rules, as they impact access to the Canadian market. This is why fostering a competitive environment here at home as well as supporting a rules-based trading environment is so important and will allow Canadian animal agriculture to take advantage of future opportunities.

The decline in the multilateral rules-based trading system threatens future opportunities for Canadian animal agriculture to meet a growing global demand for meat, poultry, and dairy products.

5. Trends in global demand and Canadian animal agriculture capacity are out of sync.

While international demand for animal proteins is expected to grow, and Canada has few competitors capable of supplying to it, Canada's productive capacity in beef and pork production has stagnated. As shown in Figure 4 below, the beef cow herd has been in decline since 2008, recently stabilizing at around 3.7 million head in 2021. That year there was a major drought on the Prairies when feed prices were at record highs and there were shortages of forage and hay. By 2023, the Canadian beef cow herd had slipped to just over 3.5 million head. While feed prices have moderated, severe drought in parts of western Canada this year led to further herd declines. There are continuous pressures on ranchers to convert pastureland to cropland. The beef cow herd is heavily reliant on pasture and grassland, and in many cases, it is the cow-calf enterprise that provides the economic incentive to maintain land in grass rather than convert it to annual crops. Recent drought and high crop prices and land values as well as urban expansion have contributed to the pressure to convert grazing land. As a result, the acreage of both tame and natural pasture in Canada has decreased to its lowest level since 2001 (Figure 5), and the cow herd has decreased (Figure 4).

Figure 4. Canadian Beef Cow and Sow Herd, 2008-2023
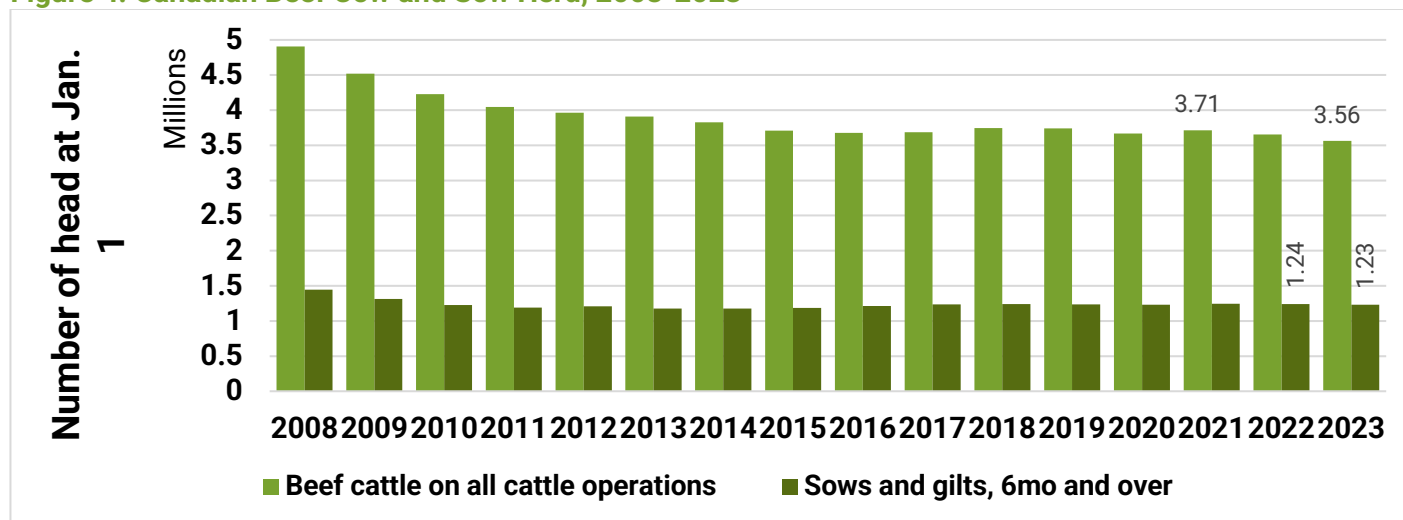
Graph created internally.
Data sources:
(1) (Livestock Survey, 2023a). *Cattle statistics, supply and disposition of cattle* (Table 32-10-0139-01) [dataset]. Statistics Canada. https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3210013901.
(2) (Livestock Survey, 2023b). *Hogs statistics, number of hogs on farms at end of semi-annual period* (Table 32-10-1060-01) [dataset]. Statistics Canada. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210016001.

Figure 5. Tame and Natural Pasture in Canada, 2001-2021

Pasture in Canada, 2001-2021 (acres)

	2001	2006	2011	2016	2021
Total	49,904,342	52,228,172	50,004,207	47,796,714	45,861,904
Natural land for pasture	38,032,172	38,157,034	36,332,724	35,240,524	33,930,325
Tame or seeded pasture	11,872,170	14,071,138	13,671,483	12,556,190	11,931,579
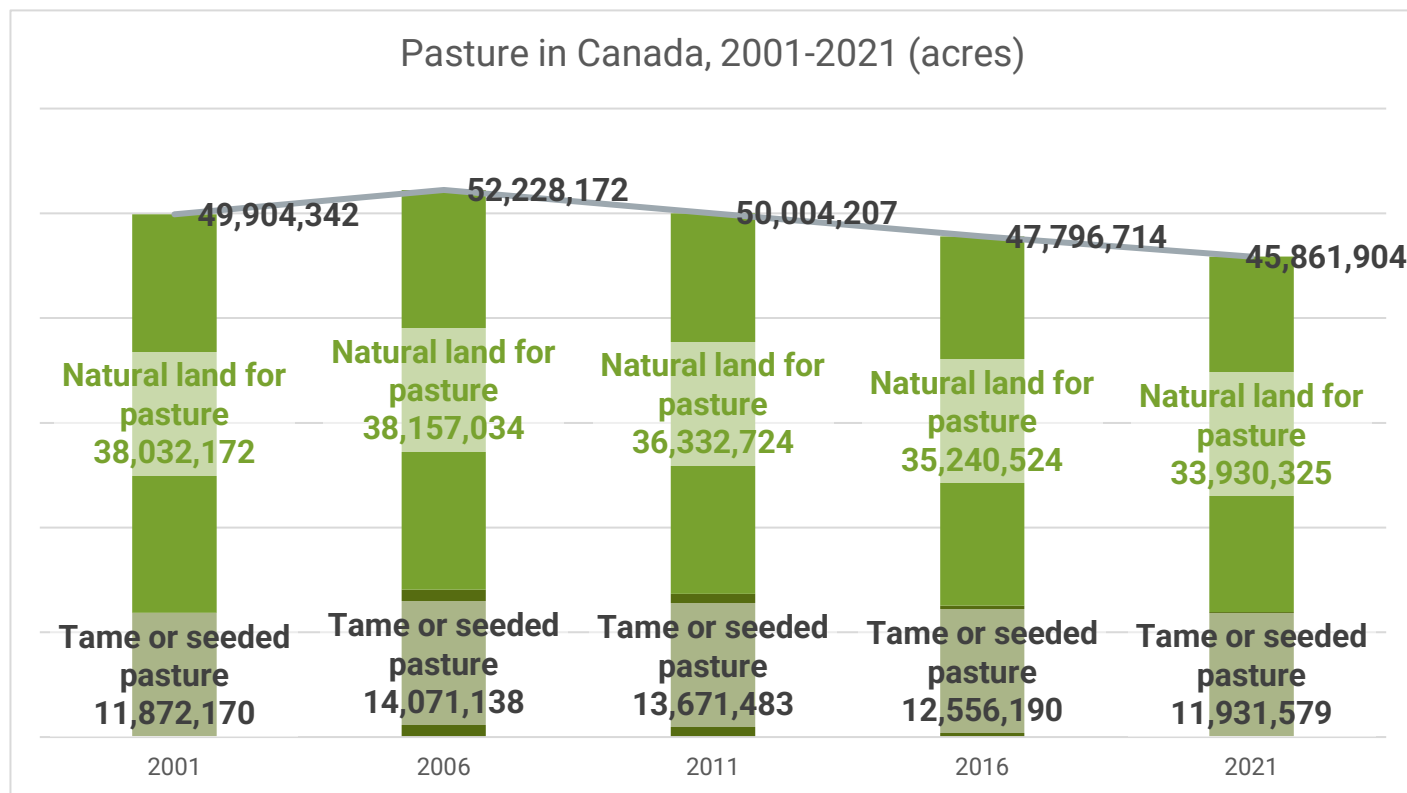
Graph created internally. Data source: (Census of Agriculture, 2022a). *Land use, Census of Agriculture, 2021* (Table 32-10-0153-01) [dataset].
https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3210024901

The Canadian sow herd declined from just over 1.4 million head in 2008 to under 1.2 million head in 2011, and has held steady at around 1.2 million head ever since, limiting increases in Canada's pig crop to improvements in reproductive efficiency over time (Figure 4). In 2023, due in part to factors related to the trading environment and excess supplies, Quebec, one of the largest hog producing provinces, committed to cull its pig herd, backed by incentive payments for producers to exit. This was coordinated with a decrease in pork processing capacity for Olymel, the largest Quebec processor, from 140,000 head per week to 80,000 head per week. It was also accompanied by an agreement in Quebec not to process out-of-province hogs, principally impacting Ontario and Maritime province hog marketings and producers.

With these complex and shifting sets of dynamics along with animal disease concerns, elevated risks have made it more difficult to make a business case for investment and capital expansion in beef and pork. The challenge may be to simply retain the existing capital stock in these industries.

Domestic-focused animal industries such as dairy, poultry, and eggs face a more stable situation with animal numbers continuing to grow for broiler chicken or grow more slowly or remain stable for dairy, turkey, and eggs. These industries face fewer of the vulnerabilities faced by industries with an export orientation, and have had strong and stable operating earnings versus sales. At the same time, their ratio of operating earnings relative to asset values have been comparatively low (see Figure 6). This represents a financial challenge for some that warrants a further dialogue.

All aspects of animal agriculture industries in Canada will continue to face a range of risks related to markets, policy, and technology

Figure 6. Farm Operating Returns versus Assets, Livestock Farms, Average per Farm, 2009 to 2021

Ratio of net cash farm income ÷ total assets, 2009 to 2021
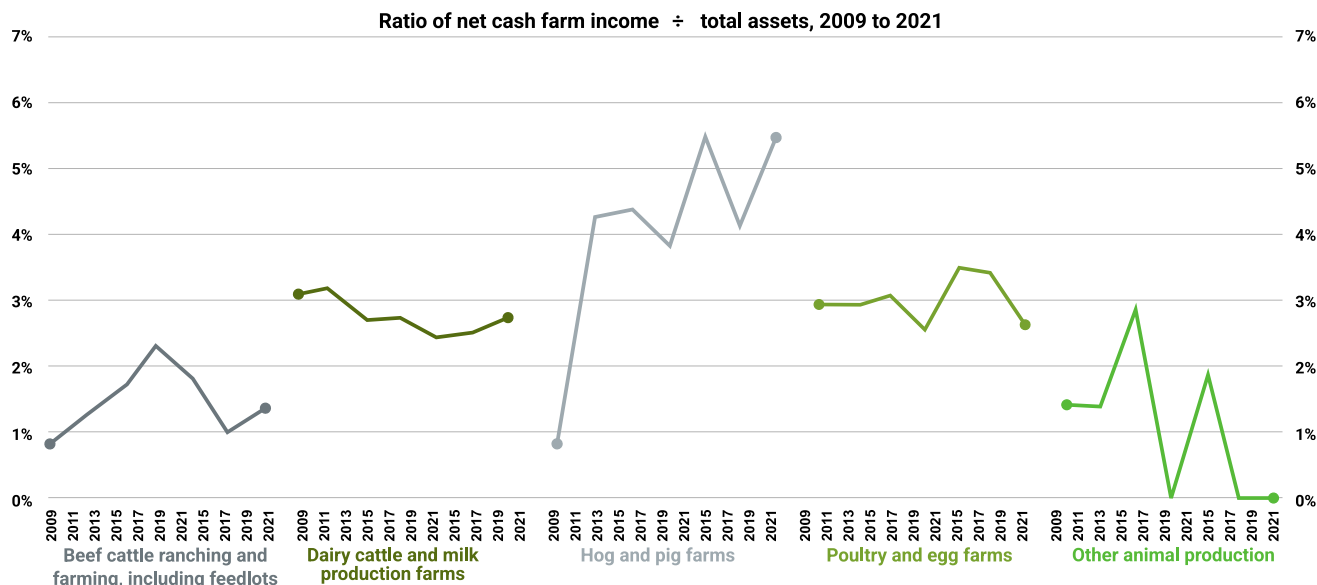
Graph created internally. Data source: (Farm Financial Survey, 2023). *Farm financial survey, financial structure by farm type, average per farm (gross farm revenue equal to or greater than $25,000)* (Table 32-10-0102-01) [dataset]. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3210010201

6. Canadian animal agriculture is a low GHG emissions intensity producer.

North America (Canada and the United States) is a highly efficient, low-emissions producer of animal products, having lower emissions intensities than many other regions in the world for beef, milk, pork, and poultry (see Figure 7). For instance, North America has lower emissions of CO_2e per kg of protein than South America for beef (109.93 kg CO_2e/kg protein compared with 365.04kg CO_2e/kg protein) (FAO, 2022). Because food security is such a pressing need and animal foods are such a core component of food security, this is not just a matter of international competitiveness. Countries will secure animal foods for the food security needs of their populations, almost regardless of the nature of emissions from their animal production systems. If the objective were to minimize global GHG emissions, Canada would be one of the preferred producers and net exporters, and higher emitting countries would import animal products from Canada to meet their demands and reduce their own production in animal industries.

This is not occurring, however, and countries report their nationally determined emissions under the Paris Accord. In Canada, all sectors of the economy have been called upon to reduce emissions, including animal agriculture. Animal agriculture accounts for 5% of all emissions in Canada; crop production represents another 3%, and on-farm fuel use, 2%, for a total of 10% coming from Canadian agriculture (Environment and Climate Change Canada, 2023, tbl. 2—12; shares computed internally). Thus, only a small portion of emission targets could be met by reducing or even eliminating livestock production in Canada. But if it reduced animal agriculture production, Canada would reduce its exports and increase imports of beef from countries with higher emissions. Other higher emission intensity countries would need to increase their production accordingly to satisfy food demand and food security needs, resulting in higher emissions globally. This is called leakage, an unintended and perverse effect of global climate change policy that does not factor in the pressing needs of food security.

Canadian animal agriculture can leverage its comparative advantage in producing animal-based food with relatively low emissions intensities. To find further efficiencies, Canada may need to consider paying farmers for ecological goods and services, such as offsetting emissions through pastureland and other carbon sinks.

Figure 7. GHG emissions intensity by region for beef, dairy, chickens (meat and eggs), and pigs

Emissions intensities, 2015
Source: GLEAM. (2015). Dashboard, version 3.0.
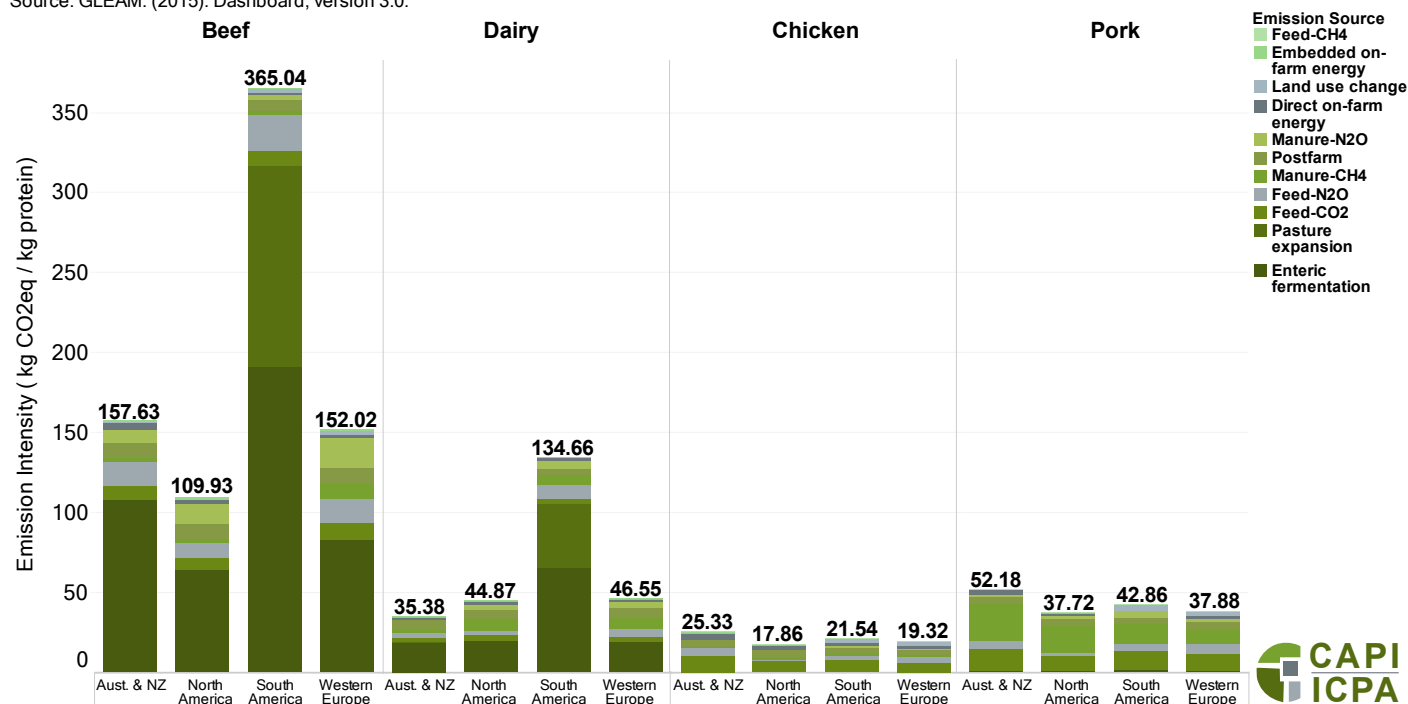
Graph created internally. Data source: (FAO, 2022). *GLEAM v3 Dashboard. In: Shiny Apps.* Global Livestock Environmental Assessment Model. https://foodandagricultureorganization.shinyapps.io/GLEAMV3_Public/.

Conclusions and Policy Recommendations

Animal agriculture in Canada is a complex and interconnected system; isolated facts or reductionist measures typically cannot characterize its challenges and accomplishments, nor its needs from policy. Rather, a portfolio of information and measures frame the policy needs of animal agriculture.

The four conclusions below touch on themes within a much larger, nuanced discussion. These points are the result of CAPI's research and multiple rounds of White Paper consultations with stakeholders and peer reviewers.

(1) The biggest issues in animal agriculture are in common across species

Much of the natural, human, created, and social capital, as well as the output flows and associated issues, are shared across animal industries. These capital stocks, and management of changes in stocks and flows, require constant attention. Markets, in conjunction with industry collective action supported by governments, have been fundamental in guiding adjustments. However, the need for renewal is ongoing, and perhaps increasing as the demands and expectations on the system are expanding – but with a thinning and concentrating of the community supporting industry collective action. Animal agriculture needs to operate – and be seen as operating – in harmony with its base of natural capital, to improve animal productivity but not at the expense of biological systems overload, and to manage complex supply chains that are resilient to a range of conditions and stresses. Government policies that support industry communities, facilitate new industry organizations where they are needed, and enhance responsible industry freedom to operate, are consistent with this ongoing and shifting need. Also, government policies are needed that support industry competitiveness, such as: an enabling environment; regulatory modernization; investments in transportation infrastructure and in research and innovation; and data and information that can provide a balanced view of the role of animal agriculture in Canada's future economic, social and environmental sustainability.

(2) Major components of animal agriculture in Canada are at risk, and require more targeted supportive policy

The beef industry is anchored by a beef cow herd that continues to shrink. Taken to its logical extent, this will eventually undermine the grain feeding/finishing segment of beef production, and with it, the economics of beef processing. Moreover, the declining beef cow herd will undermine the use of land in pasture, motivating conversion to annual crops, and in turn risks the loss of biodiversity and the release of carbon stored in grasslands. Ultimately, a decline of Canadian beef cattle farming, together with a steady or growing demand for meat products, could result in greater demand for imports sourced from countries with relatively higher emissions intensities in animal agriculture. This shifting burden of production could have adverse effects such as loss of biodiversity in Canada and higher global emissions.

The sow herd has not expanded to grow with international pork demand, even though Canada is a highly competitive supplier. The risk is that the sow herd will begin to take on the pattern of the Canadian beef cow herd, and that retention of existing supply chain capacity could be threatened. In turn, this would weaken the demand for feed grains that are the focus of competitiveness in pork (and beef) production.

This situation could be turned around with bold policy actions. A portfolio of beneficial attributes – especially biodiversity and carbon sequestration – are tied to grasslands, and grassland will readily flip into other land uses on a market basis that does not reflect the value of these attributes, and can be detrimental to them. Governments can explore policy measures that prevent the conversion of grasslands and the grazing sector, such as by facilitating conservation easements that retain land in pasture, or by providing payments for ecological goods and services (EG&S) such as carbon and biodiversity credits and management practices which increase the efficiency and profitability of beef cattle production.

The unique situation of Canadian pork relates to the shadow cast by African Swine Fever (ASF). If Canada were subject to infection by ASF, it would pose an existential threat to the industry, due to the extent to which pork depends upon export markets, and the near certainty of border closures by others in response, and resulting market isolation. This imminent threat has had the effect of chilling investment throughout the pork supply chain. Governments and industry associations have been very active on this issue, but the dimension of threat justifies greater action. In particular, public action on the problem of wild pigs as vessels of infection and a permanent reservoir of disease remains inadequate, apparently caught between jurisdictional restrictions in provincial departments with a wildlife mandate, and federal/provincial departments of agriculture. This presents an opportunity for coordinated federal-provincial-territorial action and policy implementation based on One Health principles.

Both pork and beef have suffered from the erosion of rules-based trade and gaps in bilateral trade agreements. Canada has led efforts to rejuvenate and strengthen multilateral rules-based trade, and these efforts should be redoubled. Enforcement efforts on market access provisions of trade agreements, notably the CETA between Canada and the EU, appear to have left gaps for Canadian beef and pork. The entry of the U.K. into the CPTPP agreement is another opportunity for Canada to more assertively position itself for beef and pork market access. In addition to market access, the federal government can provide enhanced market development support, especially in markets where Canada's presence in beef and pork has historically been small.

(3) Domestically focused industries can benefit from industry development

Export-oriented animal industries interface with a broader set of risk factors than domestically oriented industries, but domestic industries still face challenges. Much of the success of domestic-focused industries has been in their collaborative adaptation to changes in markets, technology, and policy. This needs the freedom to continue as, like all aspects of animal agriculture, there are problems to address and improvements to make. Federal and provincial governments are key stakeholders and can act to support and encourage industry development within the existing regulated structure. For example, system and program changes have previously been developed to facilitate new entrants into supply managed industries, to better serve niche markets, and to facilitate further processing. This support and flexibility are essential for continued growth and evolution of domestically oriented industries.

(4) Climate change policy should be a growth opportunity for Canadian animal industries

The worries of climate change and food security should be on par as policy priorities. Animal agriculture has an impact on both carbon emissions and sequestration, and is a major contributor to food security. But the emissions intensities of countries vary considerably, with Canada at the very low end of the range. For example, Canada is the 5th highest net exporter of pork in the world (FAOSTAT, 2021b; internal calculations) and produces pork with an intensity of 4.43 kg CO_2e/kg of pork (Groupe Agéco, 2018) compared with 6 kg CO_2e/kg pork, world average (GLEAM, as cited in Gerber et al., 2013). If a high animal emissions country were to downsize its animal industry and import the equivalent output from production increases in Canada, net global emissions would fall. Domestic climate change policy should bear this out. Moreover, it underscores the disadvantage of country-by-country emissions targets, and the cost of this policy approach as it applies to the necessities of life through food and food security.

Canada has been active in discussion on climate change policy, taking a whole-of-economy approach to it domestically and being heavily engaged in the international dialogue, both climate change and sustainable development goals. Canada thus has the platform, and the interest, to apply a food security filter to both national and international climate change policy, and advocate for change. Canada's comparative advantage in sustainable animal agriculture creates alignment with UN sustainable development goals (SDGs) #2 (Zero Hunger) and #12 (Responsible Production and Consumption). However, downsizing or impairing the efficiency of Canadian animal agriculture with strict emissions constraints would run contrary to the advancement of these SDGs.

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