Barton Forward: Optimizing Growth In the Canadian Agri-Food Sector

CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

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The Canadian Agri-Food Policy Institute
960 Carling Avenue, CEF
Building 49, Room 318
Ottawa, ON K1A 0C6 Canada

+1 613-232-8008
info@capi-icpa.ca
www.capi-icpa.ca
@CdnAgriFood

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Prepared by: Don Buckingham, President and CEO, CAPI; Peter W.B. Phillips, Professor, University of Saskatchewan; Tülay Yildirim, Director of Policy Research Partnerships, CAPI; Margaret Zafiriou, Research Associate
Layout and Design: Louise de Vynck, Communications Coordinator, CAPI

Please direct media inquiries to:
Louise de Vynck, Communications Coordinator, CAPI
613-759-1029
devynckl@capi-cipa.ca

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About The Canadian Agri-Food Policy Institute

As an independent, non-partisan policy catalyst, CAPI brings insight, evidence and balance to emerging issues. CAPI provides a neutral place to hold dialogues and generate perspectives among leaders across the food system. For more information, visit www.capi-icpa.ca or follow us on Twitter: @CdnAgriFood

INTRODUCTION

In March 2016, the Federal Government's Advisory Council on Economic Growth (ACEG) was tasked by the Minister of Finance to provide policy directions for conditions needed for strong and sustained long-term economic growth. ACEG, led by Dominic Barton, identified six sectors and a set of strategies to lead economic growth over the next 10 years. The agriculture and agri-food sector was identified as a strategic sector with "a strong endowment and untapped and significant growth potential."[1] It set an ambitious target of $75 billion in agri-food exports by 2027 by becoming "the trusted global leader in safe, nutritious, and sustainable food for the 21st century." About one third of the gains ($11 B) were to come from agriculture exports, with the balance ($19 B) from value-added exports.

Stakeholders heard this "call to arms". They realized that this was a "once in a life-time opportunity" that could not be ignored. In response, the Canadian Agri-food Policy Institute (CAPI) and the Public Policy Forum (PPF) together launched a series of roundtables with industry players from various provinces in March 2017 to "mobilize leaders from across the food system to determine the bold steps needed to make Canada an agri-food powerhouse."[2]

However, after the PPF/CAPI roundtable exercise was completed, CAPI was convinced that significant unexamined questions required further exploration. So, in the fall of 2017, CAPI initiated a plan to conduct "Barton Forward: Optimizing Growth" workshops. The first was in Ottawa in November 2017, followed by events in Saskatoon in December 2017 and Guelph in March 2018. A wrap-up "national conversation" was held in Ottawa in May 2018.

The motivation behind these three workshops was to commence a dialogue about the "quality of growth" rather than focusing only on its scale. Achieving $75 B in exports by 2027 may be challenging but it is quite doable. However, it is far from clear how we can do this while maintaining and enhancing Canada's natural capital and improving health and well-being of current and future Canadians, as well as preserving public trust. Without these dimensions, the sector cannot sustain long-term growth or contribute fully to a comprehensive growth strategy for Canada.

Key to "quality" growth is the role of science and innovation. Innovation is essential for spurring productivity and competitiveness. Innovation in products, practices and policies could be the path for addressing sustainability and climate change. It also has the potential to lead to the improved health and well-being of Canadians through the production of higher quality and more nutritious foods that are accessible to all.

In each of the workshops, CAPI raised four questions regarding the ACEG growth strategy for the agriculture and agri-food sector: (1) Are these realistic targets? (2) Could we achieve growth while maintaining and improving our natural capital? (3) Are they compatible with other policy objectives? (4) Does science and innovation hold the key to meeting these growth targets?

Participants were fully engaged in the conversation, providing optimistic, yet honest viewpoints during lively discussions. This allowed CAPI to derive key findings from the workshops in a framework that provides useful conclusions around the opportunities, challenges, risks and trade-offs the industry faces, and the potential solutions needed to unleash future "quality" growth.

WHAT WE HEARD

1

QUESTION – Are the Barton Report growth targets realistic?

ANSWER – Yes, Canada can potentially reach these targets, but it will not be without its challenges and risks.

The ability of the Canadian agri-food sector to expand its exports to $75 B to a significant degree depends on growth in export markets. The Organization for Economic Cooperation and Development (OECD) projects that, as an outcome of projected lower global population and income growth, trade in agri-food products will continue to grow in the decade of 2017-2026, but at a slower rate than was observed during the previous decade.

Many countries, including China, are projected to experience slowing population growth over the next decade. Overall, the world's population is expected to reach 8.2 billion by 2026, up from 7.3 billion in 2016. At the same time, slower growth in gross domestic product (GDP) is projected over the next decade. China, which led the growth in global GDP over the last ten years, will post growth of around 5.9% per year through 2026, down from above 8.5% per year in the past decade.[3] This will translate into slower growth in demand for most commodity groups, such as cereals, meat, fish and vegetable oils.[4] However, the transition to a more Western-style diet in China and India, and a preference for premium products by the growing middle class is expected to offset this decline.[5] China, in particular, is expecting its middle-class population to become the world's largest market.[6] This will have implications for global agri-food exports of high-value products, such as animal protein, organics and safe, healthy and sustainable products from top exporting countries, such as Canada.

1 ARE THESE REALISTIC TARGETS?

OPPORTUNITIES	CHALLENGES	SOLUTIONS	RISKS/TRADE-OFFS
Canada has a good reputation for clean, safe and healthy, high quality foods and hence a strong base on which to brand its products.	Competition will be stiff in the global market place; other exporters also targeting the same markets.	Increase value-added and compete on quality and sustainability. Build assurance systems, regulatory frameworks and make use of new technologies, e.g., Blockchain, for quality signalling in markets.	Too much focus on export markets at the expense of the domestic market. Growth in exports at expense of natural capital.
Opportunities from strong global demand for protein and high-quality food. Canada-EU trade agreement (CETA) was ratified.	NAFTA renegotiations are ongoing with results unknown. Canada currently has no specific agri-food trade agreements with the largest potential growth markets.	Negotiate, ratify and modernize trade agreements with China, India, Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), North American Free Trade Agreement (NAFTA). Boost market intelligence and promotion and target selective markets.	Risks from unreliable partners, i.e., United States (U.S.) and the future of NAFTA. Subsidies in competitors continue to undermine our competitive advantage.
Meeting the demand for high value products of growing middle classes through recent investments which have boosted processing capacity in Canada for more diverse products.	There are labour/skill shortages. Infrastructure bottlenecks for getting product to markets (rail, ports) in a timely manner. Cost competitiveness issues for smaller scale processors. Automation may help address labour shortages.	Training and education to boost skills. Temporary Foreign Worker programs. Fast-track skilled immigrants. Employ indigenous labour near reserves. Industry needs to invest in its infrastructure and innovation for productivity improvements.	Automation will require retraining component to fill skilled labour shortage.
Market intelligence, promotion and international regulatory cooperation could be used to expand markets.	No trade agreements with China, India yet. U.S policy stance creating uncertainty around NAFTA, Regulatory Cooperation. CPTPP not yet ratified by Canada. Market promotion under- resourced.	Continue to negotiate with the US and other countries. Consult with industry on regulatory needs. Negotiate agreements. Fund more market promotion and use trade commissioners and CFIA more effectively.	Uncertainty of outcomes.

WHAT WE HEARD

2

QUESTION – Could we achieve the Barton Report growth while maintaining and improving our natural capital?

ANSWER – Canada's agri-food sector stands to be a solution provider to the vagaries of climate change by improving the ability of plants and soils to sequester more carbon.

Canada is fortunate to belong to a very exclusive club where we are endowed with abundant resources and natural capital, with some regional variation. Canada ranks near the top in the world in terms of natural capital per capita. This allows us to be a "biocapacity"[7] surplus country, where our bioresources exceed our "ecological footprint"[8], allowing us to export some of the surplus. Other countries are not so lucky and need to import food to feed their populations. The depletion of soil and water, which has been complicated by the impacts of climate change, constrains the ability of these countries to continue to increase food production. For example, the United States is losing soil ten times faster than the natural replenishment rate while China and India are losing soil 30 to 40 times faster than the replenishment rate.[9] China has disclosed that 10% of its arable land can no longer be used for food production due to pollution. Water depletion is also a problem, with over 11% of global agricultural exports entirely dependent on groundwater. In Pakistan, the United States, India and Mexico groundwater is being increasingly depleted in the production and export of agricultural products.[10]

Canada, on the other hand, accounts for 7% of the world's renewable freshwater, and benefits from its agriculture being mostly rain-fed and hence renewable.[11] Nevertheless, recent indicators show that nearly 20% of monitored water sites (particularly in central Canada) register marginal or poor water quality due to nutrient pollution from agricultural and urban wastewater sources, persistent toxic substances and chemicals. Agro-environmental indicators also show that 88% of farmland in Central Canada is showing a decrease in soil organic matter.

The sector has performed well in reducing greenhouse gas (GHG) emission intensity; as the value of total agricultural production more than doubled since 2007 (constant dollars), GHG emissions from agricultural activity remained stable, resulting in a decline in emissions per unit of output. This was achieved mostly due to reduced tillage, the use of cover crops, improved animal genetics and the recent introduction of the 4R Nutrient Stewardship[12] program, which encourages the optimum rate and timing of fertilizer use. Canada is also one of the most efficient countries in terms of GHG emissions per unit of animal protein produced.

2 COULD CANADA ENHANCE ITS NATURAL CAPITAL WHILE ACHIEVING THESE GROWTH TARGETS?

OPPORTUNITIES	CHALLENGES	SOLUTIONS	RISKS/TRADE-OFFS
Canada has an abundance of natural capital (land, water, forests, clean air, biodiversity) and could generate economic benefits from this advantage.	True costs of environmental externalities from depleting and polluting natural capital, not reflected in price so overproduction by us and our competitors, limiting how much and how fast we can enhance natural capital. Lack of consensus on the choice of policy instruments to encourage best practices for enhancing natural capital. Price of agricultural land around urban centres is not reflecting full value, and being developed at the expense of future agricultural production.	Innovative policies and regulations needed to monetize externalities. More industry-government collaboration with clear leadership. Land regulations to preserve agricultural land and urban encroachment.	Depletion of natural capital for the sake of export growth. Losing ability to produce high quality food in a sustainable manner.
Canada has a strong track record in environmental improvement past 30 years (soil quality, livestock GHG emission efficiency etc.) from innovations, improved production practices and new technologies that could be monetized.	Environmental improvements have not occurred equally across the country. Data and methodology lacking for indicators of natural capital and ecosystem services. Policies to monetize external costs are lacking.	Boost training and education on environmental best management practices. Learn from the leaders. Improve and fund data/ methodologies. Modernize environmental regulations. Invest in research and development (R&D), and encourage use of new technologies (e.g., Artificial Intelligence (AI), drones, 4R, remote sensing, precision agriculture) to improve environmental performance of the sector.	Short term returns from high commodity prices vs long term benefits from sustainable production practices.
Industry has been investing in more sustainable practices in order to be able to maintain its reputation and public trust in its product.	Sustainability has become an entry requirement, but the proliferation of standards makes it costly and confusing. Slow adoption of new technologies (e.g., blockchain) to increase transparency along the chain for enhanced returns for marketing sustainable products.	Consolidate number of sustainability standards. Raise awareness of benefits of new technologies for transparency and of potentially higher returns from sustainable production practices.	Consumers/markets may not be willing to pay for sustainable practices.
There is an opportunity for the sector to become a solution provider to GHG mitigation while improving natural capital.	Policies for pricing externalities/ environmental impacts of agriculture not being discussed in this context.	Policies and regulations to price externalities and value Environmental Goods and Service (EG&S) needs to go beyond carbon taxes. Business Risk Management (BRM) programs need to be redesigned to motivate changes in practices by using cross compliance.	Business Risk Management (BRM) continues to encourage less sustainable practices.

WHAT WE HEARD

3

QUESTION – Are the Barton Report growth targets compatible with other policy objectives?

ANSWER – The agriculture and agri-food sector is the nexus of all these policy developments, providing the sector with many opportunities, challenges, and the promise of new partnerships seeking solutions.

The CAPI workshops took place amidst the development of the National Food Policy (NFP), the Healthy Eating Strategy, the Canadian Agricultural Partnerships (CAP), the Pan Canadian Framework on Clean Growth and Climate Change, and an array of new innovation policies, such as the Supercluster Initiative. Hence the question was asked about consistency across these policy buckets.

The National Food Policy (NFP) encourages a long-term vision for (1) increased access to affordable food, (2) improving health and food safety, (3) conserving soil, air and water, and (4) growing more high-quality food.

Health Canada's Healthy Eating Strategy encourages (1) improving healthy eating information i.e., Food Guide, (2) signalling nutrition quality through labelling; (3) protecting vulnerable populations, particularly children, from advertising, and (4) supporting increased accessibility to nutritious food in northern communities.

The Canadian Agricultural Partnerships (CAP) program prioritizes funding for science and innovation (S&I), business risk management (BRM), environmental sustainability and climate change, marketing and value-added agriculture.

Pan Canadian Framework on Clean Growth and Climate Change is a federal plan which includes a pan-Canadian approach to pricing carbon pollution, and measures to achieve reductions across all sectors of the economy. It aims to drive innovation and growth by increasing technology development and adoption to ensure Canadian businesses are competitive in the global low-carbon economy.

The Supercluster program was allocated $950 million to be shared among five clusters, including the Protein Industries Canada supercluster on the Prairies.[13]

3 ARE OTHER POLICY INITIATIVES COMPATIBLE WITH THESE GROWTH TARGETS?

OPPORTUNITIES	CHALLENGES	SOLUTIONS	RISKS/TRADE-OFFS
With so many policies in play right now (NFP, CAP, Food Guide, Innovation Superclusters Regulatory Cooperation etc.) this is an opportune time for policy coordination and "desiloification".	Funding is spread thinly to support each initiative with little real consideration for resource availability across the initiatives. Interest groups across the various initiatives are unlikely to all pull together any time soon for common policy approaches.	These initiatives are all focused on the middle to longer term, where coordination is a possibility, but requires collaboration among various stakeholders that may not traditionally have worked together.	Lack of consensus among various stakeholders to reach agreement on various policy measures.
Developing policies without creating conflicts between consumer and producer interests regarding the provision of affordable and accessible food, or health and nutrition information.	Possible incompatibility between affordable food for Canadians and profitability of farmers/food industry. Food guide and nutrition labelling may discourage the consumption of some agricultural products.	Develop a domestic market growth strategy similar to the Barton export growth strategy. Consult and engage extensively with civil society to ensure that there is industry and government awareness of community initiatives and policy measures that can address the affordability and accessibility issue of food insecure Canadians. Better consultation and communications with stakeholders on food and health issues.	Food security and affordable food may be a concern for industry profitability. Nutritional labelling may appear to create bias against certain foods.
Changing consumer preferences for organics and local food could displace imports and provide opportunities for small-scale farmers and address food insecurity.	Regulations governing organics inconsistent across provinces. Small-scale farms and firms can be less cost competitive.	Modernize organic regulations. Acknowledge multiple food systems in Canada as both large and small-scale have value, including acknowledging the role of urban agriculture for food insecurity.	Could create the perception of conventional food being unsafe/unhealthy.
Funding for innovation programming by Innovation, Science and Economic Development (ISED) Canada for the Protein Industries Supercluster.	No supercluster for health, biosciences, food processing or for sustainable use of natural capital.	Collaboration with funded superclusters to address important aspects of sustainable production and improved nutritional content of agri-food products.	Picking winners versus providing environmental and health benefits.

WHAT WE HEARD

4

QUESTION – Do science and innovation hold the key to meeting the Barton Report growth targets?

ANSWER – The critical issue is how we can move forward to make the best use of new science to improve our natural capital, increase industry competitiveness and provide domestic and international markets high quality food.

Science and innovation have been key to the progress and growth in the Canadian agriculture and agri-food sector. Many new innovations--such as crop varieties, livestock breeds and farm management practices--have delivered health, environmental and economic benefits. A number of Canadian innovations have yielded significant improvements: the development of canola provides health benefits to consumers around the world; zero-till techniques and equipment have improved soil organic matter and enhanced carbon sequestration globally; and improvements in animal genetics and feeding efficiency have reduced GHG intensity in animal protein production.

But more needs to be done to secure the ongoing delivery of sustainably produced nutritious food now and in the future. Science continues to unveil the complex relationships between soil-human-animal health and offer opportunities for lower risk, higher return, and quality food systems.

Recently, there has been increased attention and funding by the federal government for fundamental R&D and to support innovation and commercialization. Barton himself, in his second report, advocated funding and support for companies to scale up and commercialize innovations through an innovation marketplace, a private-sector-led growth fund, review and rationalization of innovation-focused government programing, and greater efforts to access talent through targeted immigration policies.[14] In Budgets 2017 and 2018, R&D funding was boosted to historical highs, particularly for soil, air and water conservation and climate change mitigation. Resources were dedicated to commercialization and new allocations were made to the granting councils, research chairs program, and federal laboratories. Funds were also advanced for a re-imagined National Research Council.

4 DO SCIENCE AND INNOVATION HOLD THE KEY TO MEETING THESE GROWTH TARGETS?

OPPORTUNITIES	CHALLENGES	SOLUTIONS	RISKS/TRADE-OFFS
Canada ranks well in scientific research capacity, has a highly educated science community and good R&D networks with plenty of food science breakthroughs in life sciences/ engineering that are being taken from discovery to incubation to commercialization.	Skill shortages in some agricultural related science fields (i.e. large animal veterinarians) and Science, Technology, Engineering and Math (STEM). Lack of an entrepreneurial/risk- taking culture and business know-how required for commercialization. Agriculture does not attract talented youth.	Encourage education/opportunities in ag-related fields. Encourage risk-taking, commercialization capacity. Encourage talented indigenous youth to study science. Get the message out that agriculture is a modern, success story so talented young people will be attracted.	
Increased attention and funding for basic research, science and innovation and commercialization federal/provincial governments.	Funding spreads thinly across needs. Business investment in R&D still very low relative to competitors. Unclear whether government or industry should lead. Regulatory framework impedes innovation--it is slow and congested. Regulatory agencies underfunded and lack sufficient expertise to speed up approval processes.	Encourage collaborations/partnerships between government and industry to identify priorities and allocate funding. Increase business investment in R&D and commercialization. Modernize regulatory frameworks to be more nimble and responsive to innovation. Provide more funding for regulatory agencies and promote outcome-based performance.	Uncertain whether public R&D crowds out private expenditures in research. New thinking around R&D required
New innovations in crop varieties and livestock with health, environmental and economic benefits.	Public trust is still a big issue preventing/slowing down the adoption. Long regulatory approval times. Lack of regulatory frameworks for new innovations such as clustered regularly-interspaced short palindromic repeats (CRISPR) in Canada.	Focus on the development of technologies with health and environmental co-benefits to maintain public trust. Engage with civil society to improve trust. Modernize regulations and frameworks to speed up approval times and help the industry adjust quickly to regulations around new technologies.	Risk that consumers/ markets may not accept/trust new technologies. There may be a trade off between swift regulatory process and maintaining public trust.
New technologies are transforming agriculture by improving agriculture management practices and transparency (AI, remote sensing drones, robotics, precision agriculture, and blockchain).	Can be disruptive to industry since requires costly changes to entire management system (i.e. new machinery). May be slow to adopt.	Education/awareness of benefits of new technologies. Subsidies to help de-risk and encourage adoption. New role for government from leading to partnering with private sector in innovation.	Small scale may not adopt, leading to further Industrialization of farming.

CONCLUSIONS

What became clear throughout the CAPI consultations was that while there was a general consensus that the sector has what it takes to achieve the Barton growth targets, it will need to do more to achieve "quality" growth. This would require maintaining Canada's natural capital, enhancing Canadians' health and well-being and preserving public trust. That requires increased accountability, authenticity and transparency in the system, which in turn should unlock value from buyers seeking certain provenance, including ethically-grounded, healthy and sustainable food systems. However, what is needed is an expanded definition of "value-added" to include quality improvements in terms, particularly a reduced environmental footprint and improved nutritional content. Canada can brand these innovations, enabling us to access new higher-margin markets.

Fleshing out how the industry is to achieve the Barton Report goals is already the focus of the *Government of Canada Economic Strategy – Agri-Food Table. Its Interim Report*[15] identifies five priorities: (1) increasing innovation and seizing value-added opportunities; (2) adopting technology and advancing digitization; (3) modernizing infrastructure and regulations; (4) increasing market access and growing exports; and (5) dealing with labour shortages and being prepared for the future.

These five priorities will clearly be necessary to achieve growth in the Canadian agri-food sector. However, the CAPI consultations revealed that more than just these five priorities will be required to achieve the Barton Report targets. CAPI believes that we will require more than "simple" growth to achieve the ambitious growth targets in the Barton Report. "Quality" growth is needed to ensure that the gains in the agri-food sector can be sustainable. **Five conclusions can be drawn from the CAPI "Barton Forward" workshops:**

1. **YES, WE CAN** -- Canada is well-positioned to achieve the Barton growth targets despite the projected slowdown in growth rates in global food consumption and trade over the next decade. Canada can become "the trusted global leader in safe, nutritious, and sustainable food for the 21st century."
2. **MAINTAIN NATURAL CAPITAL** -- Not caring for the natural capital could accelerate environmental degradation resulting in losses in productivity and erosion of public trust, which would impede Canada's longer-term prospects.
3. **MONETIZE ALL COSTS AND BENEFITS** -- Canadians certainly desire the multi-faceted growth objectives of the Barton Report, but these objectives will be difficult to achieve unless the industry, with the assistance of government and research communities, develops new ways to monetize the quality and sustainability aspects of the growth agenda.
4. **SUSTAIN HUMAN HEALTH AND WELL-BEING** -- The health and well-being of Canadians is not to be compromised by food insecurity, inequality of incomes, rising health care costs, and climate change. Therefore, our food policy, agricultural policy and science and innovation policy must be coordinated.
5. **CREATE (LEVERAGE) NEXT GENERATION CONNECTIONS** - To pave the road to success, new models of partnership need to emerge to: (1) deliver an array of public and private solutions to issues of high importance to the future performance of the industry and Canadians; and (2) bring together the science and policy communities and practitioners to generate and disseminate the knowledge required to spur action.

[1] Advisory Council on Economic Growth, "Unleashing the Growth Potential of Key Sectors", February 2017.
[2] Canadian Agri-food Policy Institute and Public Policy Forum, "Canada as an Agri-food Powerhouse: Strengthening our Competitiveness and Leveraging our Potential", Roundtable Synthesis Report, April 2017. Accessed at: http://www.capi-icpa.ca/pdfs/2017/PPF-CAPI_Agri-Food_Powerhouse.pdf.
[3]Ibid. pg. 54.
[4] OECD-FAO, Ag-Outlook, pg.22.
[5] FAO, Future of Food. Pg. 21.
[6] World Economic Forum, "Future of Consumption in Fast Growth Consumer Markets: China", p. 4. Accessed at: https://www.weforum.org/reports/future-of-consumption-in-fast-growth-consumer-markets-china.
[7] "Biocapacity" is a term used to measure a country's capacity to produce renewable resources, provide land for built-up areas and provide waste absorption services such as carbon uptake that was developed by the Global Footprint Network. Biocapacity is then compared to the country's "Ecological footprint", the amount of biologically productive land and water required to produce the resources the population consumers, while also absorbing the waste it generates, given prevailing technology and resource management. Source: World Wildlife Federation (WWF), The Living Planet Report, 2012. p. 135. Accessed at: https://www.footprintnetwork.org/content/images/uploads/LPR_2012.pdf
[8] WWF, p. 135.
[9] Global Institute for Food Security, accessed at: www.gifs.ca
[10] Nature, "Environmental Science: Eating Ourselves Dry" by Maite Aidaya, 30 March 2017.
[11]OECD, Environmental Performance Report, Canada, 2016.
[12] The 4R Stewardship Program is a certification program offered through Fertilizer Canada, described at: www.fertilizercanada.ca
[13] Finance Canada, Budget 2018, February 2018.
[14] Advisory Committee on Economic Growth, "Unlocking Innovation to Drive Scale and Growth", February 2017.
[15] Canada's Economic Strategy Tables, Agri-Food – The sector today and opportunities for tomorrow (Interim Report) (Spring 2018).