

Canada's Agri-Food Destination



A NEW STRATEGIC APPROACH





Canadian Agri-Food Policy Institute (CAPI)

960 Carling Avenue, CEF

Building 49, Room 318

Ottawa, ON K1A 0C6

T: 613-232-8008 F: 613-232-3838

info@capi-icpa.ca

www.capi-icpa.ca

Canada 



TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
INTRODUCTION: STEPS TO A NEW PLAN	11
1. CENTRE FOR GOOD FOOD CITIZENSHIP	23
2. FOOD SYSTEM SMART INNOVATION CENTRES	33
3. MANAGING RISKS ACROSS FOOD SYSTEMS	47
4. LEADERSHIP IN SUSTAINABILITY	66
5. ENABLING REGULATORY CHANGE	79
CONCLUSION: ACHIEVING THE DESTINATION	91
APPENDIX	97

About this publication

Although we strive to make the information in this document helpful and accurate, it is done so without warranties of any kind, either expressed or implied. CAPI does not warrant or make any representations regarding the use of the information in this document and its correctness, accuracy, reliability or otherwise, and disclaims all liability of any kind whatsoever arising out of use of such information or errors or omissions in this document.

This document is available from CAPI's web site in pdf format (www.capi-icpa.ca).

EXECUTIVE SUMMARY

Canada is not realizing the full potential of a major strategic asset – the country's agri-food sector. The consequences of falling profitability, lost opportunity, and declining relevance are impairing the nation's agri-food industry. Current policies and practices across the sector, and fear of changing the status quo, are holding Canada back. This is in vivid contrast to what Canada needs to achieve in order to provide the higher quality and volume of product demanded by a growing world population and increasingly aware consumers both in Canada and abroad.

The Canadian Agri-Food Policy Institute (CAPI) and many of its partners see a massive opportunity for the country's agri-food industry to maximize its natural advantages of climate, geography and skills. There have been some successes. But success needs to be pervasive. Canada can be the world's leading producer of nutritious and safe foods produced in a sustainable, profitable manner. This would pack a competitive punch that few other countries in the world can match.

Canada needs a compelling food plan that is *systems-based*, not value chain-based.

Canada's agri-food sector must have the most successful good food systems on the planet to deliver on our potential over the next 15-20 years. A more united approach is essential. Industry and government can seek and reach a new long term destination backed by appropriate short-term goals and milestones. We have the potential to change our approach and make a profound contribution to a changing food world. This is the dialogue we need to have.

Canada must have the most successful good food systems in order to achieve "75 by 25"; by 2025...

Exports: Double Canada's dollar value of agri-food exports to \$75 billion (up from \$38.8 billion).

Domestic consumption: Produce and supply 75% of our own food (up from 68%).

Bio-materials/fuels: Generate revenue and efficiency by relying on biomaterials and biofuels in 75% of the agri-food sector.

The compelling need for change: the status quo is unacceptable

Agri-food Performance

Chronic unprofitability } Farmers/ranchers have lost money from the market 7 times in the last 10 years. Funding programs are not resolving what is causing such chronic unprofitability. A new approach to risk management is required.

Rising food imports / falling exports position } Food product imports have increased over 50% since 2000. Canada used to be the 3rd largest exporter of manufactured foods – it is now 7th. An overall agri-food trade surplus is maintained by robust commodity exports, but Canada has been surpassed by Brazil and nearly by China and Argentina in the ranking of total global exports.

Diet & Our Health

Unsustainable healthcare costs } Healthcare funding is in crisis. Some 70% of provincial budgets could be consumed by health costs in several short years, squeezing funding for all. The next Canada Health Accord and agri-food sector's Growing Forward agreements need to be linked.

Role of diet and prevention } Some 80% of coronary heart disease and stroke, type-2 diabetes – and at least 50% of cancer – could be prevented with healthy eating, as part of a healthy lifestyle. Over 50% of Canadians are obese/overweight. Prevention (diet) is the focus.

Our World

Increasing resource demands } With a global population expected to exceed 9 billion people, global food demand is expected to rise 70% by 2050; global energy demand is expected to rise 40% by 2030. Food production is dependent upon fossil-fuels, which needs to change.

Intensity of environmental impacts } Environmental stresses are increasing across the country; climate change could see the risk of desertification rise in the southern Prairies by 50%. Being a reliable supplier requires adaptation and investments in science and technology.

Our Capacity to Respond

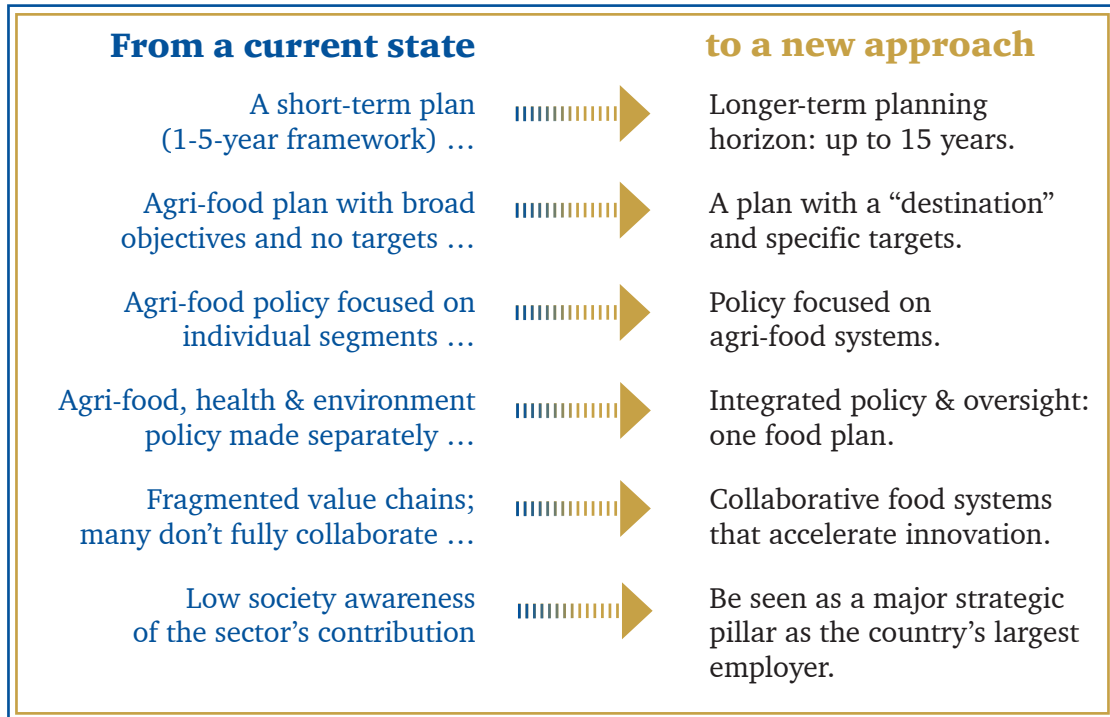
Falling R&D } Government's total expenditure on R&D (including agriculture) has fallen from some 35% to 9% since the 1970s, relative to all R&D funding in Canada. After years of growth, business R&D has declined steadily by some 8% since 2001.

Regulatory response } Global sustainability standards are being set by the private sector, not governments. Regulations are seen as unresponsive, inhibiting innovation. New voluntary and regulatory approaches are needed. As a G-7 country, Canada's innovation capacity ranks 19th (slipping recently from 18th).

Deficits } Canada's fiscal situation, while better than most countries, faces consecutive projected deficits over the mid-term.

Strategic shifts are required

The issues are complex. Strategic shifts are required in how we respond. This discussion paper offers a set of ideas and initial targets.



A new strategy based on successful “food systems”

We need to stop talking only about sectors, value chains and product lines and start thinking more about agri-food “systems”. Future success hinges on taking a systems approach that better understands the connections among many diverse players. Every ingredient and food relies on a productive ecological system managed by ranchers or farmers. Getting the ingredient or food to the consumer's plate takes a value chain, including input providers, producers, distributors, processors and retailers. All levels of government are also part of this system, acting as policy makers, regulators, funders and facilitators. As well, scientists, researchers and entrepreneurs contribute ideas and new technologies. Adjacent sectors (e.g., in the health, transportation and environment sectors) intersect with the agri-food sector in multiple ways. This goes well beyond a linear view of the sector. All these stakeholders have a leading role to play in food systems. Industry and government must call for strategic change.

The promise to deliver

Each food system must work together to decide how to deliver on the promise to provide: **good food** (about having the most nutritious and safest foods), **responsibly produced food** (about lowering the ecological footprint and increasing operational efficiencies) and a **reliable food supply** (about better managing risks across the system and utilizing bio-solutions, among other responses). In short, this is about creating a “new contract” among industry and government. Currently, Canada is not organized or aligned to support food systems. A new food plan is needed.

Enablers of change

Five “enabling conditions” are required to achieve the destination. These attributes are integrated and mutually supportive:

1. Centre for Good Food Citizenship

The centre is a new partnership among industry, government and the health community to inspire, engage and inform food systems. By promoting *good food* collaborations, best practices, and sharing successes, it facilitates “the journey” to improve healthy eating and provide nutritious foods to families. It supports innovation by focusing on nutrition priorities. The centre also provides a neutral venue to resolve consumer-food issues, such as better product labelling and voluntarily reducing unhealthy ingredients.

2. Food System Smart Innovation

Innovation centres are established and tailored for each food system; these industry-led and co-funded centres intensify collaboration on every facet of developing innovative products, coordinate “pre-competitive” data and channel private/public sector R&D in order to mitigate innovation risk and create opportunities. Their mandates: delivering the highest-quality, safest, most nutritious, and sustainably-produced foods in the global market – the hallmarks of the Canadian good food brand.

3. Food System Risk Management

Policy strategies need to consider the full breadth of risks and present integrated risk reduction and mitigation plans for each food system. For the farm sector, Agri-Stability needs to be more effective. This means proactively addressing the components of “income risk” to render income stabilization less necessary. A measured approach will free hundreds of millions of dollars to support innovation (starting with a 50% increase in R&D by 2013).

4. Leadership in Sustainability

Using natural capital responsibly (e.g., water, carbon and soil) is essential for sustainable practices and being a reliable food supplier in the future. A national minimum sustainability standard and sustainable farm plans encourage responsible practices across food systems; adaptation of beneficial management practices and better leveraging science and technology is needed to cope with environmental stresses and adapt to climate change.

5. Enabling Regulatory Change

Modernizing the regulatory process creates the optimum environment for success, while protecting consumers. Regulations need to be regularly reviewed, and possibly capped to ensure relevance. Food systems require coordinated policies and regulations. A Cabinet Committee on Food is proposed to oversee and coordinate regulatory improvements. An annual regulatory report card could be introduced to measure progress.

Dialogue on the future

CAPi is an independent, unbiased policy forum. Its mandate is to promote a dialogue on key agri-food issues. This report is based on significant input from a diverse set of partners¹ representing the agri-food value chain, governments, academia and organizations. While many issues remain unaddressed, it is a starting point.

Industry needs to champion change. Industry must act within their respective systems to make it happen. Government needs to take a long-term view and must set policies that support food systems. Achieving the destination requires taking concerted steps.

CAPi presents this destination plan for national discussion. CAPi expects to present an update on the feedback in May 2011 so that its work can be relevant to the unfolding policy discussions on the next agricultural framework, and beyond. In the near term, CAPi will further develop core ideas among those who have participated in our consultative processes and include others. As well, CAPi will explore the merits of holding a regular event that can assess the progress of strategic change in Canada and evaluate Canada's relative agri-food position on the world market.

“Behaviour change is the recipe for Canada to get ahead. Collectively, we need to change the way we collaborate, the way we work and the way we set policy.”

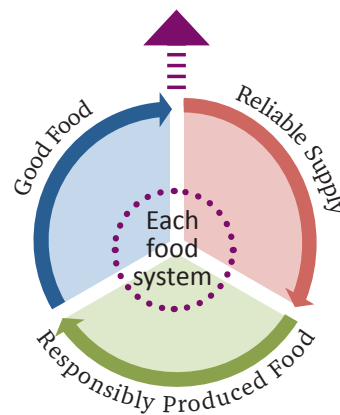
– Gaëtan Lussier, CAPi Chair

1. CAPi established three Leadership Panels in late 2009, on Food and Wellness Connection, Sustainability and Viability. The list of participants, and other CAPi partners, are listed in the report's appendix. This report may not necessarily represent the specific position of stakeholders nor imply endorsement.

“75 by 25” DESTINATION

The most successful good food systems on the planet, by 2025:

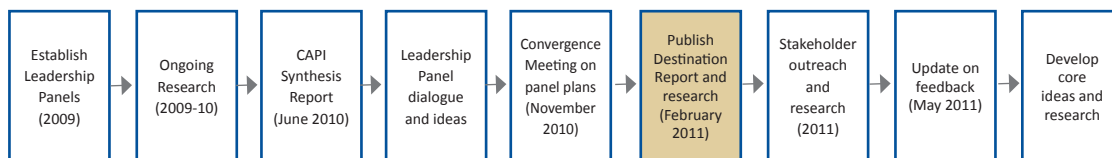
A profitable & competitive agri-food sector, healthier population, healthier ecosystems



Centre for Good Food Citizenship	Food System Smart Innovation Centres	Food System Risk Management	Sustainability Leadership	Enabling Regulatory Change
Promote collaboration/best practices	One centre for each food system type	Reduce/mitigate risk across food systems	One minimum sustainability standard	Cabinet Committee on Food
Catalyze “good food plans”	Pre-competitive cooperation	Shift from “income” focus	Create “sustainability farm plans”	Modernize processes and 10-year cap on regulations
Better food labels	Mitigate innovation risk	Six pan-sector risk categories	National ecological goods & services program – tailored locally	Joint meeting of Ministers: agri-food, health, environment
Targets to reduce unhealthy ingredients	Embed regulatory expertise	Render Agri-Stability unnecessary	Coordinate public/private S&T research	Link Growing Forward and Canada Health Accord
Promote good food choices, habits	Coordinate with public R&D	Traceability for every food	Climate change agri-food strategy by food system	Annual progress scorecard on priorities
Support research	Accelerate commercialization	Annual Ministerial risk scorecard		

INTRODUCTION: STEPS TO A NEW PLAN

In this discussion paper, the Canadian Agri-Food Policy Institute (CAPI) presents an agri-food strategy for Canada. Since 2009, CAPI has been engaged in a process to develop new ideas for a strategic shift in the agri-food sector (see timeline table). CAPI engaged three Leadership Panels representing the agri-food sector – academics, non-government organizations and governments – to initiate research, explore key food issues, and present new ideas to consider (see appendix for the list of participants and others involved with CAPI). The panels focused on three themes: “food and wellness connection,” “sustainability,” and “viability,” respectively. In November of 2010, the panels met with CAPI’s Board of Directors, its Advisory Committee, its members and other partners to review their findings. This discussion paper is the culmination of that work.



Canada's agri-food “destination”

Many of those involved in CAPI’s process identified several key concerns. These include: Canada’s competitive position, Canada’s responsiveness to the consumer, the vibrancy of each segment across the vast agri-food supply chain, and the capacity of governments to financially support the sector. They also expressed concern about the current and future state of the Canadian population’s diet and health, and the capacity of Canada’s agri-food sector to respond to climatic and environmental challenges.

A broadly shared view emerged: Canada needs a long-term plan for the agri-food sector.¹ This finding inspired CAPI to present the case for a “destination” – a commonly held, long-term goal with precise targets. Striving to achieve this destination represents a mindset shift. It presents an opportunity to align diverse interests across the agri-food sector and among governments, as well as to engage other sectors. In essence, the agri-food sector needs to work, collaborate and be regulated differently in order to fulfill its potential.

CAPI proposes that Canada’s destination be about having “the most successful good food systems on the planet.” This paper describes the reasons for this approach, the initial targets, and five enablers that can help the sector achieve this goal.

Industry leadership. Government leadership.

The call for strategic change needs to come from the agri-food sector. The responsibility rests with the sector to embrace a new way of working, collaborating and innovating. Industry leadership is a must.

The call for change needs to come from government, too. The responsibility rests with government to embrace a policy set that supports vibrant food systems. Government leadership is imperative.

This report offers ideas on how all stakeholders can enact change. Ultimately, each stakeholder (and each food system) would consider how its own respective objectives can fit within the ultimate destination. Each food system needs to develop its own “good food plan.”

Your ideas, CAPI's next steps

CAPI wants to receive feedback. Our future work will focus on how we can best reach the destination. Consensus may not be possible. But we seek to convey a balanced view. We can help to dispel myths or assumptions. We can present best practices and new models. CAPI presents a suitable forum to challenge conventional thinking, not to create new roadblocks. CAPI expects to provide an update on the feedback in May of 2011.

Collectively, we want consumers in Canada and abroad to choose Canadian food and ingredients. We want investors to choose Canada. We want Canada to be the healthiest country in the world and for our food industry to participate in realizing that goal. We want to be the best at managing water, soil, and carbon. We want to realize a profitable, competitive agri-food sector that creates jobs and makes a significant contribution to Canada's economic prospects.

The following sections summarize many of the ideas that provided the basis for this process.

The compelling need for change: the status quo is unacceptable

Agri-food Performance²

Chronic unprofitability } Farmers/ranchers have lost money from the market seven times in the last 10 years.³ Funding programs are not resolving what is causing such chronic unprofitability. A new approach to risk management is required.

Rising food imports/ falling exports position } Food product imports have increased over 50% since 2000.⁴ Canada used to be the 3rd largest exporter of manufactured foods – it is now 7th.⁵ An overall agri-food trade surplus is maintained by robust commodity exports, but Canada has been surpassed by Brazil and nearly by China and Argentina in the ranking of total global exports.⁶

Diet & Our Health

Unsustainable healthcare costs } Healthcare funding is in crisis. Some 70% of provincial budgets could be consumed by health costs in several short years, squeezing funding for all.⁷ The next Canada Health Accord and agri-food sector's Growing Forward agreements need to be linked.

Role of diet and prevention } Some 80% of coronary heart disease and stroke, type-2 diabetes – and at least 50% of cancer – could be prevented with healthy eating, as part of a healthy lifestyle.⁸ Over 50% of Canadians are obese/overweight.⁹ Prevention (diet) is the focus.

Our World

Increasing resource demands } With a global population expected to exceed 9 billion people, global food demand is expected to rise 70% by 2050;¹⁰ global energy demand is expected to rise 40% by 2030.¹¹ Food production is dependent upon fossil-fuels, which needs to change.

Intensity of environmental impacts } Environmental stresses are increasing across the country; climate change could see the risk of desertification rise in the southern Prairies by 50%.¹² Being a reliable supplier requires adaptation and investments in science and technology.

Our Capacity to Respond

Falling R&D } Government's total expenditure on R&D (including agriculture) has fallen from some 35% to 9% since the 1970s, relative to all R&D funding in Canada.¹³ After years of growth, business R&D has declined steadily by some 8% since 2001.¹⁴

Regulatory response } Global sustainability standards are being set by the private sector, not governments. Regulations are seen as unresponsive, inhibiting innovation. New voluntary and regulatory approaches are needed. As a G-7 country, Canada's innovation capacity ranks 19th (slipping recently from 18th).¹⁵

Deficits } Canada's fiscal situation, while better than most countries, faces consecutive projected deficits over the mid-term.¹⁶

Canada's advantages and opportunities

In the face of these challenges, Canada has discernible advantages:

1. **Economic engine:** The agri-food sector is a major contributor to Canada's economy; the sector represents about 8% of Canada's GDP and is Canada's largest employer, employing 1 in every 8 Canadians.¹⁷
2. **Natural resources:** Canada has an abundance of natural resources such as water, energy, nutrients and arable soils. Canada occupies an enviable position.
3. **Climate:** While Canada's northern climate limits the growing season, its colder climate results in lower reliance on crop protection materials. Climate change could result in drought, pests and disease and increasingly put farm incomes at risk; but change also could see longer growing seasons and increased crop yields for some crops.¹⁸
4. **Diversification:** With diversified crop and livestock production, Canada has the conditions and the capacity to produce a broad variety of important ingredients and foods; Canada is even supplying greenhouse tomatoes to Florida.
5. **Export pedigree:** Canada has major export successes. It exported nearly \$39 billion in agri-food products last year. Canada is a global export leader in key commodities (e.g., pulses, canola) and in many niche markets. Canada is one of the world's most export-dependent countries. Canada supplies some 40% of India's lentils.¹⁹
6. **Innovation platform:** Canada has innovation successes and has the infrastructure upon which to build. Across the agri-food sector, innovation is being supported. A highly educated workforce, including in primary agriculture, facilitates this innovation.
7. **Reputation:** Canadians are trusted, and Canada has a global reputation for providing safe and secure food.
8. **Stability:** Canada's economic and political stability is important for productivity and attracting investment.
9. **Diversity:** Canada's ethnic diversity gives the country a source of market knowledge and market opportunities.
10. **Governance:** The country maintains good governance practices. Canada's five-year agricultural planning cycle has established the basis to create a long-term strategic plan for the country by setting priorities and coordinating federal and provincial policies and programs.

... Leverage our distinct strengths

Principles to guide the new approach

Key principles needed to guide strategic development:

1. **Long-term planning:** A bold, forward-thinking goal (destination) with progressive targets to achieve it allows the marketplace and government to plan for and adapt to change.
2. **Systems thinking:** A viable agri-food sector operates within an ecological and value chain system, and intersects with other sectors (e.g., health and environment).
3. **Food system viability:** Within each food system, the value chain needs to be successful and profitable; as such, agriculture should be treated as a business. (For “lifestyle” farms, which are important to rural Canada, other types of policies may be better suited to meet their needs.)
4. **Collaboration:** Deeper collaborative efforts across each food system can generate new and profitable opportunities.
5. **Consumer-focused (“demand-pull”):** Each food system is intent on meeting customers’ and consumers’ evolving needs and expectations.
6. **Innovation-focused:** Innovation is broader than “R&D” and commercialization; it is about constantly pursuing efficiencies and seeking out revenue opportunities in every aspect of the operation; it is also about how firms collaborate to create opportunities.
7. **Responsive regulations:** A responsive regulatory system protects consumers/ society and accelerates competitive success. It is a holistic view.
8. **Food system risk management:** Risk mitigation and reduction efforts need to be addressed across food systems (i.e., the components of risk, and not the end-result or “income risk”).
9. **Self-reliance:** Governments play a supporting role; they should not assume the risk for business operator commercial decisions.
10. **Assessment:** Policy objectives need to be transparent, clearly articulated, and evaluated.

... We share a common intent

Catalysts

Strategic change requires “catalysts” – or targets – to seize attention. Targets can be used to inspire or be used to drive performance that is based on specific initiatives. Many examples exist in Canada and abroad:²⁰

- ▶ **Australian Commonwealth Scientific & Research Organisation:** Increase productivity by 50% and reduce carbon emissions intensity by at least 50% by 2030, for Australian agriculture and forest industries.
 - ▶ **British Columbia:** Act Now B.C. campaign sets a 20% reduction in the proportion of the B.C. population currently classified as obese and overweight; 20% increase in the proportion of B.C. population that eats vegetables and fruit five or more times per day; plus other wellness goals.
 - ▶ **Canada (federal):** Reduce total GHG emissions by 17% by 2020, relative to 2005 emission levels; requiring an average renewable fuel content of 5% in gasoline and a 2% equivalent requirement for diesel.
 - ▶ **Canadian Heart Health Strategy and Action Plan:** By 2015, increase by 20% the proportion of Canadians who eat at least five servings of vegetables and fruits per day; by 2015, increase by 20% the proportion of Canadians who are physically active; by 2015, decrease by 20% the rate of Canadian adults who are overweight/obese and the rate of childhood obesity from 8% to 5%.
 - ▶ **Canola Council of Canada:** Boost canola production by 65% to 15 million tonnes by 2015; targets also include increases in oil content, among other initiatives.
 - ▶ **City of Toronto:** Procure 50% of its municipal institution food locally (i.e., from Ontario).
 - ▶ **Health Canada:** The Sodium Reduction Strategy for Canada has an interim sodium intake goal of a population average of 2,300 mg of sodium per day to be achieved by 2016.
 - ▶ **Loblaws:** 100% of seafood sold in its stores from sustainable sources by end of 2013.
 - ▶ **McGill University:** Its Sustainable Food Purchasing Policy defines local produce as that grown within a 500-km radius and defines local food purchasing targets by the season for its food services: 75% local food purchases in the summer, 50% in the fall, and 25% in the spring.
 - ▶ **Nova Scotia:** Being one of the cleanest and most sustainable environments by 2020 with 21 specific targets (e.g., reduce nitrogen oxide emissions by 20%).
-

- ▶ **Ontario:** A 20-year energy plan launched in 2007 includes the phasing out of coal-fired generation (“coal-free”) by 2014.
- ▶ **South Australia:** Food strategy to generate \$16 billion in gross food revenue by 2015, among other goals.
- ▶ **United Kingdom:** Publishes a Food 2030 plan to create a dialogue for a national food strategy.
- ▶ **U.S. Air Force:** Aircraft to use a 50:50 blend of biofuel and conventional jet fuel by 2016.
- ▶ **Walmart:** To be supplied by 100% renewable energy and create zero waste. (This prompted the US dairy industry, a key supplier to Walmart, to set a 25% emission reduction target by 2020.)

... Attaining the destination

Destination: “Successful Good Food Systems”

Every ingredient and food relies on a productive ecological system managed by ranchers or farmers. Getting the ingredient or food to the consumer’s plate requires a value chain that includes input providers, producers, distributors, processors and retailers. All levels of government are also part of this system, acting as policy makers, regulators, funders and facilitators.²¹ As well, scientists, researchers and entrepreneurs contribute ideas and new technologies. Adjacent sectors (e.g., in the health and environment sectors) intersect with the agri-food sector in multiple ways. All these stakeholders have a role to play in food systems.

However, the agri-food sector needs to shift away from the traditional, or linear, supply chain approach. Canada’s future success depends on each food system focusing on common objectives: “good food” (about having the highest quality, nutritious, and safest foods), “responsibly-produced food” (about lowering the ecological footprint and increasing operational efficiencies) and “reliable food supply” (about better managing risks, using bio-solutions, improving market access, and adapting to a changing climate). Successful food systems need to work differently and governments need to support them with the right mix of policies.

A “new contract” – a new relationship – is needed among stakeholders if Canada is to meet its full potential in a changing agri-food world, and achieve the destination identified in this paper.

This approach will enable Canada to fulfill the proposed targets (see diagram and summary of five chapters).

If other countries work harder to be reliable suppliers, such as by ensuring market access, being faster adopters of bio-solutions and mitigating a range of risks, then Canada is put at a disadvantage.

If other countries produce more innovative, nutritious, and higher quality foods, then food imports can only be expected to rise and Canada will lose market opportunities.

If other countries are more efficient at minimizing product life-cycle costs and setting the standards for reducing their ecological footprint, then Canada will be relegated as a follower in a world that increasingly values sustainability leadership.

Canada needs to have the safest and most nutritious foods, with the lowest inputs (e.g., pesticides), and the lowest water and carbon footprint. It needs to be a highly reliable supplier of ingredients and foods, supported by the best risk mitigation and regulatory practices, and the smartest use of bio-solutions. These advantages would pack a competitive punch that few other countries in the world could match.

“Enabling conditions”

Canadian food systems require several enabling conditions (to be addressed in the chapters ahead):

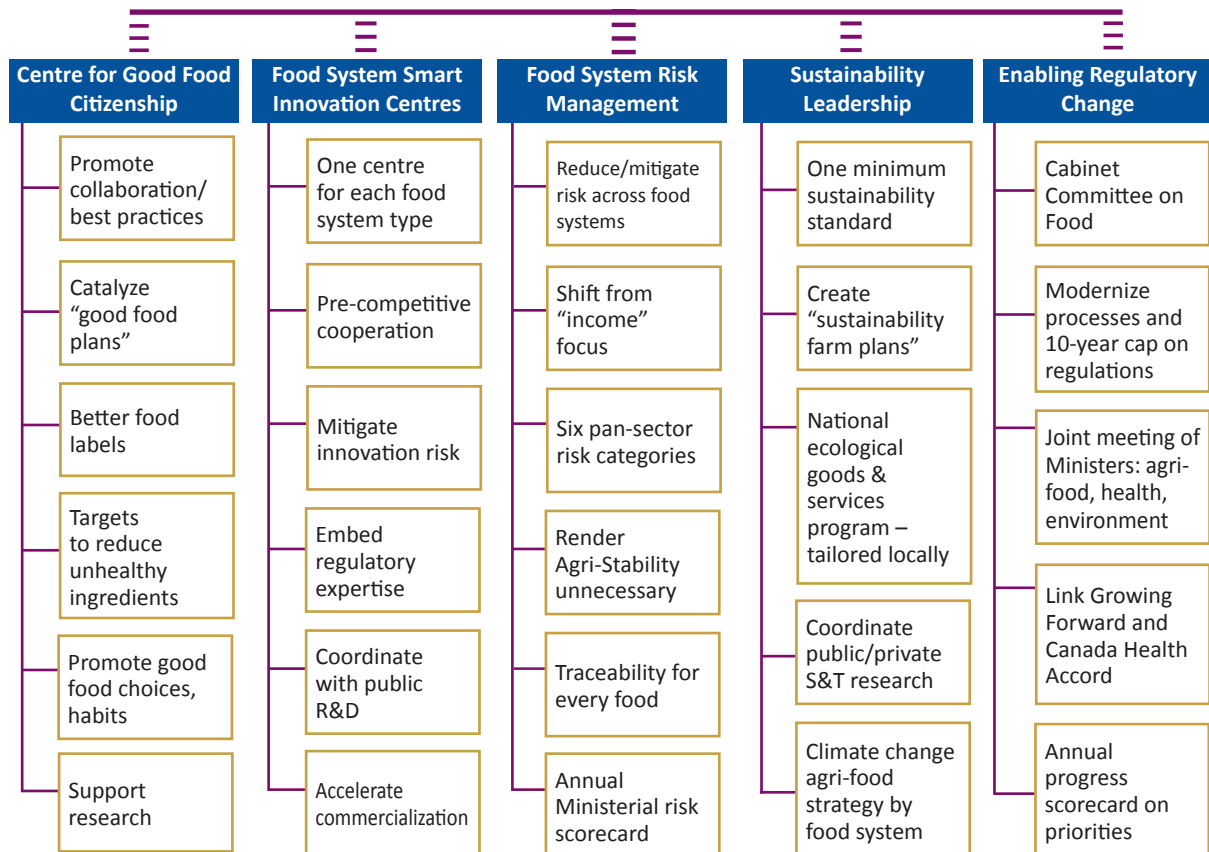
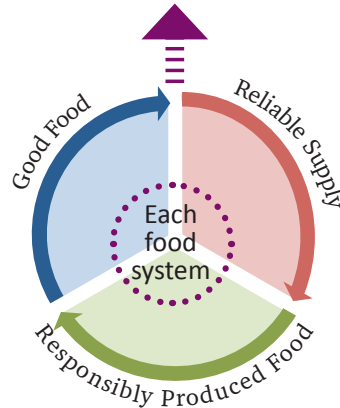
1. Proactively engage stakeholders to promote good food best practices and solutions.
2. Collaborate intensively within each food system to improve how we innovate.
3. Reduce and mitigate the full breadth of risks to improve the food systems' prospects for viability.
4. Use natural capital responsibly (i.e., water, carbon and soil) to nurture sustainable practices.
5. Modernize the regulatory process to create the optimum environment for success, while protecting consumers.

... The most successful good-food systems on the planet

"75 by 25" DESTINATION

The most successful good food systems on the planet, by 2025:

A profitable & competitive agri-food sector, healthier population, healthier ecosystems



Endnotes

1. This report may not represent the specific position or view of each stakeholder, nor should their participation in CAPI's process be considered necessarily as an endorsement of the content or recommendations.
 2. There are many issues that underscore these performance indicators affecting current or future competitiveness, profitability, and viability of the agri-food sector, including: high farm debt levels; the appreciation of the Canadian dollar; closures of processing facilities; inadequate scale and loss of capacity in the processing sector; concerns about retailers sourcing food from abroad, not from Canada; trade actions and countries' restrictive market access requirements; food imports to Canada seen to have less regulatory oversight; supply management provides a risk management mechanism for some Canadian production but also limits export opportunities and limits Canada's supporters at the World Trade Organization; commodity exports (while important) increasingly compete against major low-cost suppliers from other countries; lack of product differentiation; policy frameworks focused on incomes support for primary producers, not "business generation" as the primary focus of programming.
 3. *Net Farm Income: Agriculture Economic Statistics*, Catalogue No 21-010-X; net government payments to the sector, after producer premiums: *Direct Payments to Agricultural Producers: Agriculture Economic Statistics*, Catalogue No. 21-015-X, Statistics Canada.
 4. Between 1999 and 2008, imports of consumer-oriented products grew 50.8%. *An Overview of the Canadian Agriculture and Agri-Food System*, 2009, Agriculture and Agri-Food Canada, Chart B2, 14.
 5. *Global Trade Atlas*; AAFC calculations, based on HS06/NAICS (311, 3121); rank measured in terms of \$US; Canada placed 9th in 2008 and in 7th in 2009, down from 3rd in 2001. Overall exports fell from a record high of \$42.8 billion in 2008 to \$38.8 billion in 2009, while imports rose from \$29.7 billion to \$30.4 billion in 2009. This resulted in a reduced trade balance of \$13.1 billion to \$8.4 billion in 2009. Note that Canada's trade balance for commodities increased by 115% when averaging 2008/2009 data and comparing to 2000/2001 data and the food and beverage products trade deficit marked a deficit of 124% relative to this same period; Canada's overall total trade balance was positive and represented a 26% increase over this period.
 6. In 2008, Canada's share of the world agriculture and agri-food export share by country was 5.5% (an increase from 4.2% in 2001); in 2008: Brazil: 8.6% (an increase from 3.9% in 2001), Argentina, 5.4%, (an increase from 2.7%) and China, 4.5% (an increase from 3.2%). *An Overview of the Canadian Agriculture and Agri-Food System*, Agriculture and Agri-Food Canada, June 2003, Chart A2.3, World Agriculture and Agri-Food Export Share by Country of Origin 2001, p. 11; and, 2008 edition, p.30.
-

7. For example, British Columbia's healthcare budget will consume over 70% of provincial spending, if left unchecked by 2017/18. (John Millar, Provincial Health Services Authority, Presentation, CAPI Leaders Summit on Food for a Healthy and Prosperous Future, February 2010.) Ontario's healthcare costs are expected to reach 70% of that province's total operating budget by 2022. (George Zegarac, Deputy Minister, Ontario Ministry of Agriculture, Food and Rural Affairs, Presentation, Food & Health Advancing the Policy Agenda Workshop, Richard Ivey School of Business, March 2010.) Total health expenditures in Canada are forecasted to be \$191.6 billion in 2010 (National Health Expenditure Trends 1975-2010, Canadian Institute for Health Information, October 2010, p. 2).
 8. A healthy lifestyle includes: diet, regular physical exercise and avoidance of tobacco. *Position Statement, Access to Affordable, Healthy and Nutritious Food*, Heart & Stroke Foundation of Canada, 2008; *A national system for the prevention of chronic disease*, Canadian Cancer Society, website, 2010; *Preventing Chronic Diseases: A Vital Investment*, World Health Organization.
 9. Statistics Canada; total adults in Canada (2009): 51.6% obese/overweight.
 10. *How to Feed the World by 2050*, Food and Agriculture Organization, September 2009.
 11. The time has come to make the hard choices needed to combat climate change and enhance global energy security, Press Release, International Energy Agency, November 10, 2009.
 12. *Degrees of Change: Climate Warming and the Stakes for Canada*, Climate Prosperity Report 02, National Round Table on the Environment and the Economy, 2010. The report also found that climate change could bring significant positive benefits, such as increasing crop yields for some crops by 40% under certain temperature change conditions.
 13. Gross domestic expenditures on R&D, by science type and by funder and performer sector, annual (dollars) Statistics Canada, Table 358-0001; accessed January 11, 2010; Agriculture and Agri-Food Canada.
 14. Gross domestic expenditures on R&D, by science type and by funder and performer sector, annual (dollars) Statistics Canada, Table 358-0001; accessed January 11, 2010; Agriculture and Agri-Food Canada.
 15. *Global Competitiveness Report*, World Economic Forum (2010-2011). Canada's rank fell from 18th in 2008-2009.
 16. Economic and Fiscal Assessment 2010, Office of the Parliamentary Budget Officer; summary of fiscal projections, November 3, 2010.
-

17. The food retail/wholesale industry was the largest contributor to the agriculture and agri-food system's GDP, followed by food, beverage and tobacco processing. Primary agriculture accounted for about 1.8% of national GDP in 2008, up slightly from 2007. In addition, in terms of contribution to total provincial GDP, agriculture and agri-food processing plays the largest role in Saskatchewan and Prince Edward Island, accounting for nearly 13% and 12% of provincial GDP, respectively, in 2008. East of Manitoba (except for P.E.I.), food processing accounts for the largest share of GDP. In the Prairies, primary agriculture plays a more important role. *An Overview of the Canadian Agriculture and Agri-food System*, Agriculture and Agri-Food Canada, chart B1.1, B1.5. Data provided by Agriculture and Agri-Food Canada, as reported in the Labour Force Survey, show that the agri-food system employs 12.5% of the employment share in 2009, greater than any other industry segment.

18. See *Degrees of Change: Climate Warming and the Stakes for Canada*, Climate Prosperity Report 02, National Round Table on the Environment and the Economy, 2010.

19. Canada is the world's fourth-largest agricultural and agri-food exporter, after the U.S., the EU and Brazil. Canada accounts for 5.5% of total world agricultural and agri-food exports. Canada's share is 3.5% if intra-EU trade is included. *An Overview of the Canadian Agriculture and Agri-food System*, Agriculture and Agri-Food Canada, chart B2.1.

20. Targets are portrayed as examples and have not been assessed or validated by CAPI.

21. Governments play multiple roles in society. While governments often formulate and implement policy in "silos" that are not coordinated, all three levels of government are increasingly looking at issues from a systems standpoint. The Public Health Agency of Canada is exploring the linkages between human, animal and ecosystem health (known as "One Health"), including the economic impact of zoonotic infectious diseases (such as BSE and avian flu) both from a national and global perspective. The Canadian Food Inspection Agency, among other federal departments and provincial governments, are also interested in the interconnected nature of human, animal, plant and environmental health, known broadly as biosecurity. At the municipal level, the City of Toronto, for example, has developed a broad food policy linking health, community, culture, food security, economic and environment issues. (This initiative is profiled in the last chapter of this report.)

1. CENTRE FOR GOOD FOOD CITIZENSHIP

Promote
collaboration/
best practices

Catalyze
“good food
plans”

Better food
labels

Targets to reduce
unhealthy
ingredients

Promote good
food choices,
habits

Support
research

Summary

Canadians can regain control of their health; food will play a major role. Canada's prosperity depends on it. In the face of serious health challenges, such as increasing chronic disease and obesity, Canadians can be empowered to make healthy food choices. Canada can also become a model for improving the nutritional quality of its food and ingredients. This is the right thing to do. Supporting a “consumer-push” for more nutritious foods can help invigorate food systems. The country needs a new collaborative approach that can help improve the diets, and health, of Canadians and support new opportunities for the agri-food sector.

This discussion paper proposes the creation of a Centre for Good Food Citizenship – a partnership among industry, government and the health community to inspire, engage and inform stakeholders on good food opportunities and practices. The Centre would promote best practices, shares successes, and encourage new ideas to support “the journey” toward healthier eating and providing nutritious foods to families.

The Centre would assume both “horizontal” and “vertical” roles, supporting healthy food choices while advancing a healthy Canadian food brand. Under the horizontal approach, the Centre would provide a forum to advance self-regulatory approaches on product labels and unhealthy ingredients, and address regulatory issues that inhibit marketplace innovation. Under the vertical approach, the Centre would support collaborative efforts within individual food systems, such as on common research priorities and through partnerships to develop unique good food plans. (The Centre would ultimately work with the innovation centres proposed in the next chapter.)

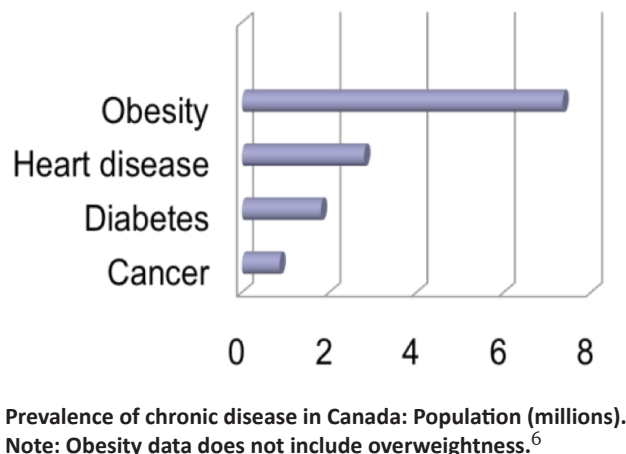
In short, the Centre can become a catalyst to develop good food plans across and within food systems.

What's Not Working

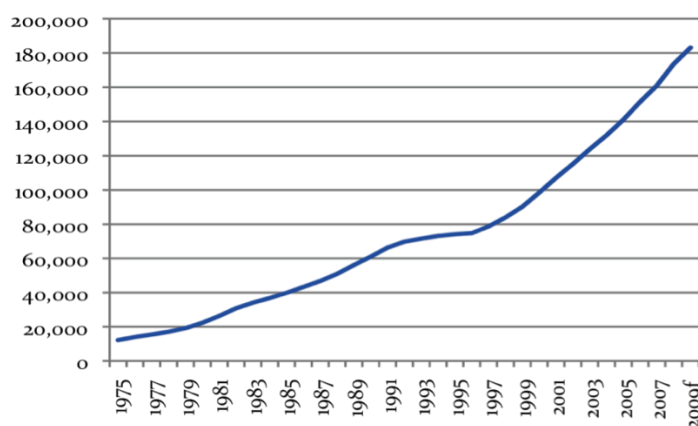
Healthcare costs: Healthcare costs are unsustainable.¹ Total health expenditures in Canada are nearly \$190 billion.² Forecasts see healthcare consuming some 70% of provincial budgets as early as 2017.³ Chronic diseases, such as cancer, cardiovascular disease, respiratory disease and diabetes account for 32% of hospital admissions.⁴

Unhealthy eating: The World Health Organization indicates that at least 80% of premature heart disease, stroke and type 2 diabetes and 50% of cancer could be prevented through a healthy diet, as part of a healthy lifestyle. Unhealthy eating is a critical consumer and societal issue. Canada also faces an overweight and obesity “epidemic.”⁵

Clearly, food and diet play a major role in disease outcomes, and rising healthcare costs present serious challenges for society. Canada’s agri-food sector could, and perhaps should, play a role in responding to this issue, and may realize new opportunities by exploring ways – through food and ingredients – to address the health issues facing Canadians.



Food issues: There are criticisms about consumers’ lack of nutritional skills and food habits, about food labels and the use of unhealthy ingredients, among many consumer-food issues. There are many tough issues: Is the Canada Food Guide working? Are product labels consumer-friendly? Should we regulate reductions in unhealthy food ingredients?



Trend in total healthcare expenditures in Canada (\$ millions, current).⁷

Do we understand the health attributes and benefits of every Canadian food?

Agri-Food opportunities

Diet and health are economic drivers for agri-food companies. In February 2010, CAPI brought together over 60 leaders representing the health community, educators, scientists, producers, food processors/manufacturers, restaurants and federal/provincial governments to focus on improving the links between the agri-food and health sectors.⁸

Cargill described the tremendous effort required to get a major innovative product to market (such as zero trans fat canola oil). It requires a complete value-chain approach that starts with R&D, leads to a production process that can involve thousands of producers, and culminates with supplying the product to the end-use restaurant chains that cook with the oils. Cargill noted that it can take over 10 years and an investment of \$50 to \$100 million to fulfill this process, which includes the critical step of receiving regulatory approvals.

An entrepreneur, David Farnell, described how his family-owned company supplies healthy meals to Toronto-area daycares, feeding over 5,500 children daily. The company buys directly from 29 local producers and growers.

Winnipeg's Canadian Centre of Agri-Food Research in Health and Medicine is conducting clinical work into the health attributes of flax. The case underscores the importance of evidenced-based research. The project could lead to tasty, economic, and nutritional products that will deliver therapeutic doses of flaxseed.

What is Working

Companies, organizations and governments are responding to the food-health challenge (see box story "collaborations").⁹ There are many indicators of change:

- ▶ Disease prevention is an increasing focus. Efforts are underway to improve diet and governments are reaching out to other sectors, and industry, to improve population health.¹⁰
- ▶ Action is being taken by manufacturers to reduce the use of trans fat in pre-packaged foods¹¹ and by restaurants to reduce sodium levels.¹² Canada now requires that levels of trans fat be included on the Nutrition Facts table. While trans fat levels have dropped some 30% over a four-year period, there continues to be pressure to ensure compliance to the reduction plan.¹³
- ▶ While less than half of Canadians consume five or more servings of fruits and vegetables per day – far short of the required 5-10 servings per day – the number is up 8% since 2001.¹⁴ (Clearly, more needs to be done.)

Consumers see the health benefits of foods, nutrition and diet (and the agri-food sector is responding to this trend or facilitating it)¹⁵:

- 82% of Canadians agree that foods can be used to reduce the use of medications.
- 57% of Canadians choose foods based on desirable nutritional qualities.
- 39% of Canadians choose food that provides a preventative benefit from health concerns, such as diabetes, cardiovascular disease and high blood pressure.
- 45% of processed foods launched in 2008 contained health and nutrition messaging – an increase of 14% since 2002.¹⁶

What's Needed

The agri-food sector has a role to play in contributing to a healthier society and population diet needs. It's also an economic driver.

The good food brand: Advocates of a “Canadian good food brand” and the “Canadian diet” suggest that Canadian food has superior attributes that consumers should value. The appeal of the “Mediterranean Diet” is well-recognized. Yet, many Canadian do not know of the health attributes of many Canadian grown or available foods, such as canola oil, trout, various berries, flax and pulses, among other foods.¹⁷ As well, Canadian food is generally regarded as being produced with less pesticides thanks to Canadian winters. In the future, having full “food traceability” – the ability to track an ingredient to a specific farm field or animal – could attract even greater interest (and reassurance) among consumers who want to know where their food comes from and how it is produced.¹⁸ Defining the attributes of a good food brand presents opportunities. Food systems can build on and use these ingredients to develop new, nutritionally rich foods.

Food-health collaborations

Governments across the country have developed food/diet/health initiatives, such as:

Act Now BC: This initiative was formed to improve the health of British Columbians through a whole-of-government approach. It includes a plan to align health and agricultural objectives. Its goals include a 20% increase in fruit and vegetable intake and reducing by 20% the percentage of the population that is overweight and obese.

Québec: Eight government departments have developed an action plan to improve health and manage rising health costs. With the help of a private foundation, one initiative involves creating a model approach to promote a healthy lifestyle and diet. As part of this broad effort, the government is examining how the agri-food industry can play a role in improving the nutritional value of food and is evaluating the role of local food systems in order to create business opportunities and healthy diets.¹⁹

New markets: Canada's agri-food sector could benefit from connecting food systems to urban and demographic opportunities. For instance, Toronto is the recipient of most immigrants from Asia, and this market is primarily served by imported produce. Supplanting merely 10% of imported ethnic vegetable product with domestic-supplied produce would create a \$73 million market for Ontario farmers.²⁰ Understanding the nutrient desires of demographic groups or communities also presents opportunities to supply healthier foods and opens new channels for food innovation.²¹ This requires properly branding locally-produced foods.²² Advertising and promoting Canadian foods have been shown to work.²³

International collaborations: success & failure

Norway: In 1975, Norway launched a successful Nutrition and Food Policy to combat the country's high incidence of cardiovascular disease (CVD). The main goal was to reduce the proportion of fat in the diet from 42% to 35% – a goal achieved in 1991.

In the 1980s, its objectives focused on education and “individual responsibility to change” (rather than a focus on the food supply). In the 1990s, policies emphasized the prevention of chronic diseases other than CVD. Norway's efforts have relied upon a cross-sectoral collaborative approach with industry, governments and communities.

Scotland: In 1996, Scotland launched a failed Scottish Diet Action Plan to link food and health policy. In 2004, a review panel found that the plan's goals had mostly fallen short in improving fruit and vegetable consumption and that sugar intake actually increased.

A major cause of the shortcomings was the plan's failure to engage the food supply chain. Institutions and leadership across the supply chain and in government were not aligned effectively.²⁴

Canada's healthy food brand has potential abroad, too. In developing countries, the burgeoning middle class is driving up demand for food, such as protein. This presents an opportunity for value-added products and commodities. What may be less known is that these countries face a massive shift in disease profiles; they are “importing” the same chronic disease as the West. Some 70% of cancer deaths are now occurring in the developing world.²⁵ These countries will also be looking to improve the diets of their populations. While a vast number of people struggle just to meet their daily food needs, the middle classes in these countries will increasingly be looking for healthier foods to be part of their diets, which creates an opportunity to promote Canada's products and healthy food brand.

There is also a role for the food sector in advancing consumer issues.

Persistent issues: There is a prevailing view that solutions to complex issues rest with “somebody else”: *if only the regulatory process could be more responsive; if only scientists could provide definitive answers; if only government could fund more R&D; if only producers could meet evolving retailer food specifications; if only processed foods had less sugars, sodium and saturated fat; if only retailers could source more food from within Canada; if only restaurants could promote healthier ingredients; if only consumers could adopt better eating habits; if only...*

A new process is desired: The sector continues to make progress on various consumer-food issues. But a means to resolve complex food issues is needed. A myriad of approaches exist, from legislation to relying on self-regulation to allowing the marketplace to just naturally sort out some of these matters.²⁶ Through CAPI’s consultations,²⁷ it became clear that a proactive response among many stakeholders representing the agri-food sector, the health community and government could move forward together to address key issues. This is the basis for a broad systems response.

Labelling: The sector can contribute to healthier diets by promoting healthy food choices. Providing clear product information and labelling gains attention. Although consumers make purchases largely on the basis of price, people are increasingly taking into account a broader combination of factors that include price, choice, quality, safety, nutrition, ethics, distance from markets (“100-mile diets”), ecological footprints, water and carbon use, animal-handling practices, and growing practices. How such features are portrayed on product labels – and the ability of consumers to compare labels – will draw greater scrutiny from processors, retailers, and consumers.

Centre for Good Food Citizenship: The “Centre for Good Food Citizenship” is a concept advanced by CAPI’s Leadership Panel on Food and Wellness Connection. The Panel proposes a new, deeper collaborative approach across the value chains and other sectors, and a partnership with government beyond the traditional regulatory role. The Centre would provide a platform for supporting food systems, make progress on key issues, and help to promote healthy food choices.

Goal: Systematically support good food systems

Targets

- | | |
|---|----------------------|
| 1. Establish a Centre for Good Food Citizenship | 1. Implement by 2013 |
| 2. Develop a better food label | 2. By 2015 |
| 3. Develop a self-regulatory approach to reduce priority unhealthy ingredients in our foods (e.g., saturated fat, simple sugars). | 3. By 2015 |

Concept

Canada needs a broad-based and dynamic Centre to support good food. A co-funded private-public/pan-government partnership would become *the* platform for creating a systematic means to resolve complex food issues, share best practices, and promote good food habits. It would also be a catalyst to promote a broader understanding of the health attributes in foods, and could advance research that supports food innovation.

This is not a government organization. The Centre would require the participation of government (representing key departments and across jurisdictions), non-government organizations in health and wellness, and agri-food organizations and companies across the sector. This is a place to help evaluate and support progress on the journey toward implementing good food plans and practices.

Elements

To support good food plans:

Inspire, engage & inform: Promote the development of “good food plans” by providing a repository for holding and sharing best practices. The Centre supports collaborations among stakeholders in each food system, celebrates successes and helps to inspire others to be part of a movement of change that embraces good food.

To support consumer choice:

Communities: Support disease reduction targets (set by the health/public sector) by including the agri-food sector in broader societal efforts to inform and educate consumers. Ultimately, families need to embrace good food choices.

Product labels: Develop a universal, better food label to facilitate consumer understanding and choice. This initiative will also need to consider how labelling incorporates “sustainability,” such as water and carbon-use in the production and supply of foods. (Refer also to the discussion in the chapter on Sustainability.)

Ingredients: Develop a self-regulatory approach to reduce unhealthy ingredients in foods (e.g., saturated fat, simple sugars). This work builds on similar initiatives for sodium reduction. (R&D will be needed to support such transformational shifts.)

To support innovation:

Nutrition profiles: Generate diet/nutrition profiles for every cultural/demographic group (also to support education) as a basis to support food innovation.

Research: Suggest priorities for coordinated/joint agri-food and health research to advance nutrition/functional food research. Be a place for researchers to inform partners.

Regulations: Address regulatory issues that inhibit the development of safe, nutritious and novel foods.

Endnotes

1. For example, British Columbia's healthcare budget will consume over 70% of provincial spending, if left unchecked by 2017/18, leaving little room for other priorities (John Millar, Provincial Health Services Authority, 2010). Ontario's healthcare costs are expected to reach 70% of that province's total operating budget by 2022. (George Zegarac, Deputy Minister, Ontario Ministry of Agriculture, Food and Rural Affairs, Presentation to the Food & Health Advancing the Policy Agenda Workshop held by the Richard Ivey School of Business, March 2010.)
 2. Canadian Institute for Health Information, 2010.
 3. See CAPI's *Proceedings Report, Leaders Summit on Food for a Healthy and Prosperous Future* (June 2010), p. 17.
 4. A national system for the prevention of chronic disease, Canadian Cancer Society, website, December 2010.
 5. Ontario's Chief Medical Officer of Health, 2008; obesity rates in Canadian children have almost tripled in the last 25 years (Childhood Obesity Foundation, 2009).
 6. Canadian Institute for Health Information, 2010.
 7. Canadian Institute for Health Information, 2010.
 8. *A Pathway to a Healthy & Prosperous Future*, CAPI, 2010; and *Proceedings Report, Leaders Summit on Food for a Healthy and Prosperous Future*, CAPI, 2010.
 9. See a list of government responses in *Building Convergence: Toward an Integrated Health and Agri-Food Strategy for Canada*, CAPI, 2009, Appendix 6.
 10. See, for example, the Declaration on Prevention and Promotion announced by Ministers of Health and Health Promotion/Healthy Living, September, 2010.
 11. After a campaign to lower trans fat, improve nutrition labelling and raise consumer awareness to this issue, in June 2007 the federal Minister of Health urged voluntary reductions in trans fat with the prospect of regulated national limits being imposed if progress was not made within two years. (Trans Fat; What's Being Done?, Health Canada website.)
 12. In 2010, a voluntary sodium reduction target was adopted relating to industry voluntary action to provide low-sodium choices, promote public-private research and enhance consumer awareness and education. The Sodium Reduction Strategy for Canada (2010) has an interim sodium intake goal of a population average of 2,300 mg of sodium per day to be achieved by 2016.
 13. Canadian consumption of trans fat dropped 30% from 2005 to 2009. Ratnayake, L'Abbe, et al, J AOAC Int 2009.
 14. 45.6% of Canadians over 12 years reported that they consumed fruit and vegetables five or more times per day, up from 37.6% in 2001. In Quebec, it is 54.0%. (Canadian Community Health Survey, 2009.)
-

15. Demand for Food Products Supporting Health and Wellness, AAFC, 2004, <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1240000892821&lang=eng>.
 16. *Food & Health: Advancing The Policy Agenda Workshop Report*, Richard Ivey School of Business, 2010, p.22.
 17. See examples of food/agriculture and agri-food products grown and manufactured in Canada with functional ingredients providing various health benefits in Appendix 5 of *Building Convergence: Toward an Integrated Health & Agri-Food Strategy for Canada*, CAPI, 2009.
 18. Retailers, too, are interested in origin of food production practices. Walmart asks its food suppliers whether they know the location of 100% of the facilities that produce supplier products. (Supplier Sustainability Assessment, Walmart, page 4.)
 19. Presentation by Dr. Alain Poirier, Ministère de la Santé et des Services sociaux, on the work of the Société de gestion du Fonds pour la promotion des saines habitudes de vie, made to the CAPI Leaders Summit on Food for a Healthy and Prosperous Future, Feb. 2010.
 20. Jim Brandle, Vineland Research & Innovation Centre, Presentation to CAPI's Convergence Meeting, November 2, 2010.
 21. *Strengths, Weaknesses, Opportunities, and Threats Analysis of the Ethnic Food Sector in Ontario*, Prepared for Agriculture and Agri-Food Canada, by WCM Consulting Inc., March 31, 2008.
 22. For example: Provincial government campaigns include: "Foodland Ontario," "Buy PEI," "Explore Local" (Alberta), "Buy Manitoba," "Mangez Québec," and "Select Nova Scotia."
 23. Studies show the benefits of advertising to increase food consumption, and revenues. (*Analysis of Returns to Program Spending in the Agri-Food Sector*, Shelley Thompson, CAPI, 2010.)
 24. *Finding Common Ground: Food for a Healthy Population and a Healthy Agri-food Sector*, 2007, pp. 25-27. Norwegian Nutrition Policy and Nutrition Campaigns, Northern Ireland Assembly Briefing Note 95/0925.
 25. Preventing an Impending Disaster, WHO DG Chan Urges Global Action to Fight Cancer, International Atomic Energy Agency, Scientific Forum, September 22, 2010. Chronic disease levels are increasing because of a changing unhealthy diet, along with tobacco use, lack of physical inactivity, urbanization, environmental reasons, and so on.
 26. Governments have a broad variety of tools at their disposal to address issues from taxation, regulations and standards, to promoting self-regulatory responses and collaboration and information/education initiatives. (*Building Convergence: Toward an Integrated Health and Agri-Food Strategy for Canada*, CAPI, 2009, Appendix 3.)
 27. Through the work of the CAPI Leadership Panel on Food and Wellness Connection in 2009-2010, the Leaders Summit on Food for a Healthy and Prosperous Future, February 2010, and the Convergence Meeting on Canada's Agri-Food Destination in November 2010.
-

2. FOOD SYSTEM SMART INNOVATION CENTRES

One centre
for each food
system type

Pre-competitive
cooperation

Mitigate
innovation risk

Embed
regulatory
expertise

Coordinate
with public
R&D

Accelerate
commercialization

Summary

In Canada, innovation is a recognized priority. Much has been done to support investments in basic research, research networks, commercialization incubators, centres of excellence, and sectoral clusters. Yet Canada's innovation performance lags compared to its chief competitors, and R&D investments are declining. Though Canada has benefited from some well-known innovation success stories, the country needs to become smarter in its approach to innovation, and better able to transform innovative advances into a competitive advantage. Priority-setting and tighter coordination between private and public sector R&D are required. R&D generates a big pay-back (compared to income support programs), and Canada needs to do more to take advantage of this opportunity, such as strategically coordinating its R&D assets. As budget pressures intensify, the return-on-innovation investment must be continually demonstrated.

In the agri-food sector, Canada needs an innovation formula to fully unlock the value and potential held within each food system. To that end, this discussion paper proposes the creation of "food system smart innovation centres." Each centre would have "a line of sight" to the consumer and bring all those involved in innovation to the table. It would focus R&D and innovation initiatives for each food system in one place. Intensive collaboration is one way to help offset innovation risk, such as leveraging pre-competitive cooperation and information-sharing within each food system. This would lay the groundwork for new proprietary products to take shape. The centres would also seek out innovative approaches at every stage of product development, from new growing methods, to finding innovative ways to reduce input costs, to even improving distribution methods that help add value to products. Each centre would be designed and operated by industry stakeholders and focus on commercialization to ensure it is relevant to the food system in question. The centres would help the sector achieve a new level of sophistication in its approach to innovation.

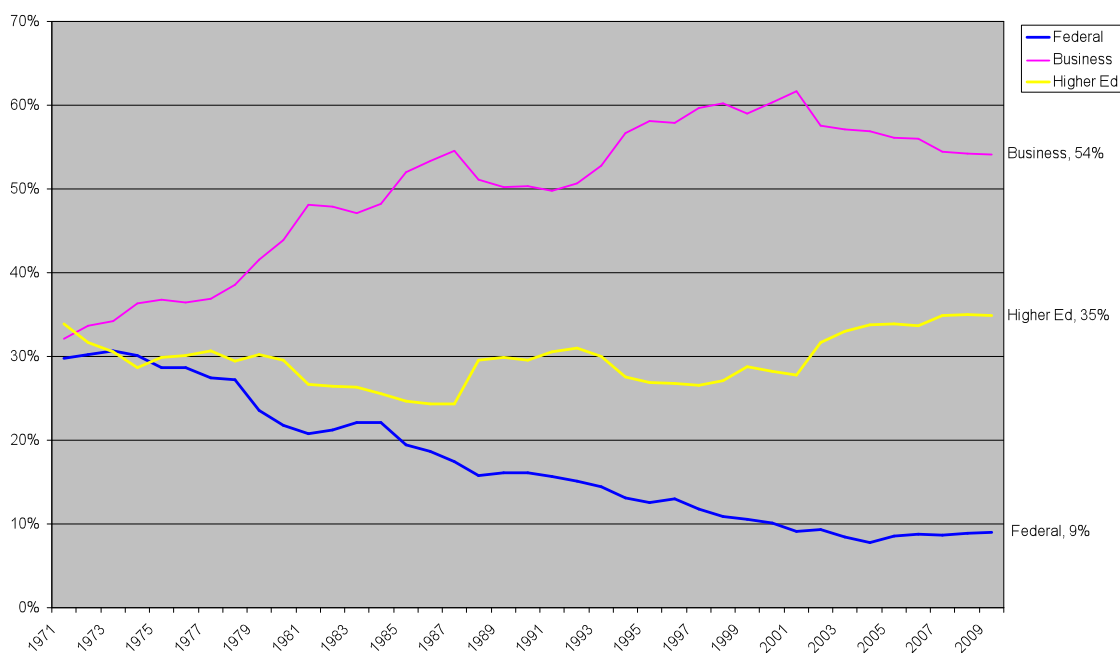
What's Not Working

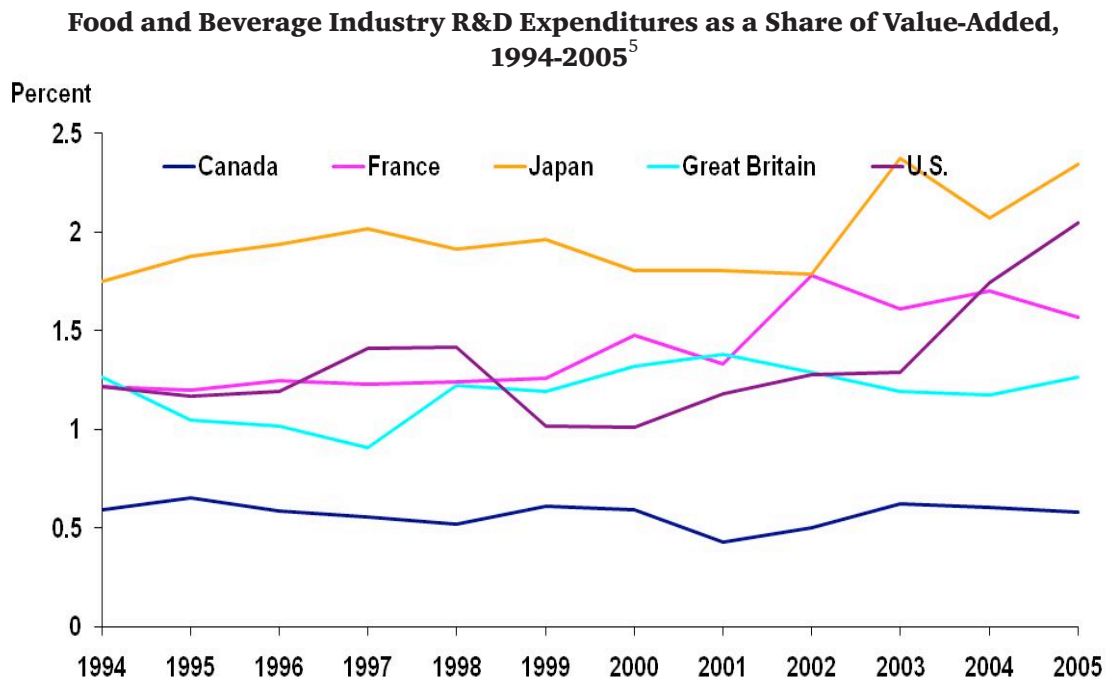
Public sector R&D is declining (see graph: “Percentage of GERD,” below).¹

Innovation ranking: Despite certain successes, many commentators lament the fact that Canada’s position and performance as an innovative economy ranks well below its competitors. The widely-quoted Global Competitiveness Report ranks Canada 19th in capacity for innovation out of 139 countries.² Another measure considers private sector R&D expenditures (at about 1% of GDP) which ranks Canada at about 20th position globally.³ Moreover, overall federal government funding for R&D has consistently fallen over the past several decades, from a high of about 35% in the early 1970s to today’s contribution of some 9%. (See graph: “Percentage of GERD.”) While the other sectors (business and higher education) have proportionately grown over this same period, business’ contribution has fallen about 8% since 2001.

R&D performance: There are reasons to be concerned about the state of agri-food innovation. In terms of overall government agri-food spending, research and development (“R&D”) receives only about 7% of funds compared to other sector priorities (see pie chart: “Distribution of annual average agri-food sector spending”). For food manufacturing alone, R&D spending consistently lags behind that of competing nations⁴ (see graph: “Food & beverage industry R&D expenditures”).

Percentage of GERD by Performing Sector

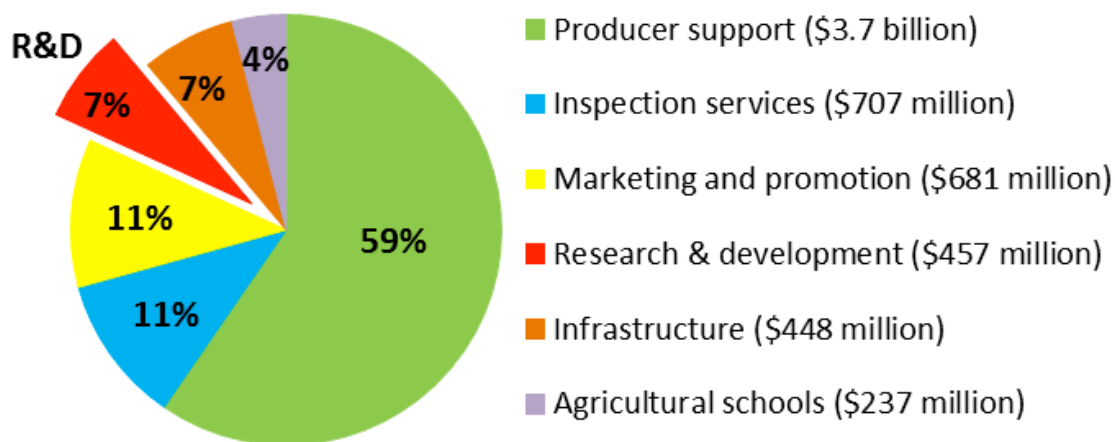




Another concern is that government R&D capacity does not seem to be well coordinated for optimum effect. That is, the many federal and provincial government departments and research institutes do not have a strategic plan to coordinate innovation priorities in the agri-food sector. This observation extends to the private sector. Even across value chains, there is a view that research and commercialization opportunities are not systematically undertaken, although there are exceptions, as noted in this chapter (see box stories on canola and soy).

Regulatory disconnects: The lack of coordination also causes “regulatory disconnects.” Research conducted for CAPI into DHA-milk, pulses and wild blueberries found that while government policies and programs do support research, regulations and practices can hold back or interfere with economic opportunities.⁶ For instance, governments support clinical trials into health benefits and fund research into novel varieties or new applications. Yet, at the other end of the spectrum, novel food approvals are costly and lengthy. As well, companies must overcome labelling hurdles and grapple with trade barriers that can hamper getting products to market. Such regulatory disconnects create disincentives to invest and innovate in Canada (this subject is addressed more fully in the chapter on Enabling Regulatory Change).

Distribution of the \$6.3 billion annual average agri-food sector spending by federal/provincial government (over the last 10 years, 2000-2009)⁷



S&T priorities: Another concern is that the agri-food sector is not included in one of Canada's four science and technology ("S&T") priority areas. The agri-food sector is a major contributor to Canada's GDP and employs one in eight Canadians. Yet "agri-food" is not a designated priority. This has implications for assigning funding priorities; as a result of the S&T focus, for instance, the Natural Sciences and Engineering Research Council of Canada's priorities for 2011-2015 will no longer support "quality foods and novel bioproducts."⁸ This being said, the priority S&T focus areas have some relevance to the agri-food sector.⁹

Strategic positioning: Canada's competitors will increasingly rely on biotechnology as a strategic advantage. So must Canada. For instance, one of China's strategies is to be a leader in biotechnology as a basis to increase its agricultural innovation and capacity. With only 10% of the world's arable land, but 21% of the world's population, China sees biotechnology as playing a fundamental role in increasing the productivity of crops to meet food security objectives.¹⁰ The prospect of losing prospective market share because others are more innovative means Canada must continue to be strategic in its approach.

What is Working

Canada has an innovative spirit (see box stories on canola and soy). Being "innovative" goes beyond basic research; it is a far broader concept. It can involve fundamentally shifting the business model. The Canadian wine industry, for instance, shifted from

an under-performing segment to an integrated Canadian VQA (Vintners' Quality Assurance) brand that has won international awards and increased market success.¹¹ Being innovative means performing better at every stage of the product cycle.

Rate of return: Research demonstrates that agricultural R&D has a high rate of return. For example, the benefit derived from public funds spent on R&D has a higher return than funding for direct farm support programs.¹² In the quest to be innovative, Canada should not neglect the importance of basic R&D. Creative work done today is an investment in our capacity to respond to future challenges. The question is how to best structure innovation funding so that it enhances competitiveness.

Supporting innovation: Canada has a variety of vehicles to deliver innovation funding. The National Research Council (NRC) supports 11 technology clusters (only some are relevant to agri-food). The NRC defines a cluster as being “a significant concentration of innovative companies around a nucleus of R&D facilities in a single locale.”¹³ They are designed to share risks and accelerate moving R&D into commercialization.

Innovative collaborations: Soy

Protein made from soybeans is used in some 60% of processed food products in North America. Other components of the soybean, such as oil and fibre, are now being utilized in a wide variety of next generation, non-food biobased applications such as renewable lubricants, waxes and car parts.

Innovation works best when the complete value chain benefits. With government funding support, research drove a better understanding of soy food-based applications, resulting in new soybean varieties being developed for domestic and export purposes. Today, researchers are developing new varieties specifically for food and next generation bioproduct opportunities. Actively connecting researchers with interested companies enabled such research to reach the consumer and delivered benefits from the seed developer to the retailer.

Value chain innovation organizations link researchers with business, the end result being the commercialization of new opportunities. They can also identify emerging needs for future growth and wealth creation, such as new soy processing infrastructure required to support the growing bio-products market.¹⁴

Recently, Agriculture and Agri-Food Canada invested \$68 million in 10 agri-science clusters in partnership with industry.¹⁵ These largely commodity-focused clusters connect to university and other research facilities, provincial departments and federal institutions. While productivity, breeding and yield research are a major focus across the clusters, projects are far-ranging in their scope. A number of projects include commercializing innovation, enhancing food safety, improving life-cycle analysis

“The made in Canada crop”: Canola

The development and promotion of canola, a healthy vegetable oil, came about through a public R&D effort and supported by the value chain. Canola, which has surpassed wheat as number one in farm cash receipts in Canada, was embraced because of the involvement of farmers, processors, industry organizations and regulators (i.e., for pesticide registration, variety registration, and IP management). As well, support was received from nutritionists, dietitians and health advocates because of its health profile and by market demand, particularly from retailers and the food services sector as they shifted away from unhealthy trans fat.

Agriculture and Agri-Food Canada was instrumental in developing canola cultivars and in establishing the nutritional properties of canola oil; the University of Manitoba, the National Research Council and the food processing industry contributed to this effort; as well, resources from the Canola Council of Canada supported the successful application for GRAS (Generally Recognized As Safe) status in the US. Since the introduction of canola, private seed developers have continued to innovate and have introduced new herbicide-tolerant varieties, hybrids, and specialty oil profiles. The entire value chain in canola recognizes the importance of cooperation to continue to increase the size of the crop and attract innovation. Grower profitability is one of the key drivers to maintain success in this commodity.¹⁶

and sustainability and strengthening the links to consumer opportunities, such as conducting nutrition and health research (e.g., supporting clinical trials to determine the health benefits of commodities for humans and animals).

Collaboration: A promising form of innovation is finding new ways to bring players together to create value. For example, the Vineland Research & Innovation Centre (see box story) is developing an approach to mitigate “innovation risk” for growers and horticulture businesses. By bringing together the input supplier, producer, processor, and others, the Centre may be able to facilitate new product development. Vineland’s value chain approach supports all aspects of innovation, including new product development, on-farm production, shipping, packaging and market research. This approach means working collaboratively with value chain representatives at the early stage of product development. It involves combining research and product development, consumer market assessments, and business capabilities at the outset in order to steer innovation to meet market demand. The end result is ideally a faster, more market-focused outcome with industry partners who are collectively targeting a specific market opportunity (in the case of the box story example, an innovative and potentially healthier mushroom).

Canadians want to innovate. The question is: are we meeting our potential?

What's Needed

Risk & reward: The Vineland approach could be a means to address two prevailing criticisms of innovation and new product development in the agri-food sector. Firstly, producers often feel they are expected to shoulder more of the risk (e.g., to grow a product long before the product goes on the retail shelf). Secondly, they do not feel that they fully share in the market reward after the product is purchased.

Pre-competitive initiatives: Supporting the development and sharing of so-called pre-competitive data and research could spark innovation. For example, analyzing the nutrient profiles on demographic segments and nutrient densities on ingredients could generate new food product ideas. Uncertainty exists on whether there is enough investment in human nutrition research and enough understanding of how this data can be best used to support crop and food innovation.¹⁸ Pre-competitive cooperation also has its limits. Individual companies will only want to participate to a point because of competitive or proprietary interests.¹⁹ As well, university researchers may be held back by intellectual property policies which can be a disincentive to support commercialization of university research. Still, finding ways to enhance the value of pre-competitive efforts could be an important catalyst for food systems. This may also build trust among value chain players and foster new collaborations.

Linking priorities: There is an increasing interest in linking health and agri-food research, such as supporting clinical trials for flax.²⁰ Given the rise of diet-related chronic disease and obesity facing the country, the need exists to more systematically link the research work being undertaken in the health and the agri-food sectors.

This approach would apply to other research priorities; academics question whether Canada

South Australia's approach

South Australia's "Food Strategy 2010-2015" sets out the vision: "Food – beyond the expectations of consumers around the globe" and aims to increase food exports by some 30%.

To be more globally competitive, the strategy shifted from having a supply chain focus to a whole food chain approach. The strategy is based on better understanding consumer product needs and integrating the response back through the retail, wholesale, distribution, processing and producer segments.

This approach requires the value chain to work together to reduce costs, add value and save time.

The Netherlands's approach

The Netherlands has also adopted an approach to use research as a change agent. It has devoted more resources toward research all along the food chain.

Public and private investment in R&D is relatively high, compared to other countries. Total public investments in knowledge systems represent nearly 40% of the total budget of the Ministry of Agriculture, or the equivalent of 4% of the production value of primary agriculture. R&D expenditures are almost six times that of Canada on a per unit agricultural GDP basis.¹⁷

Delivering value: Pulses

Canada has become the world's largest exporter of high quality pulse crops (peas, beans, lentils and chick peas) for the commodity market. But Pulse Canada, the association representing growers, processors and traders, is seeking to increase overall value for the industry. Pulses and their derivatives such as flour, fibre and protein are being used in a variety of food products to improve nutritional value.

A key challenge in reaching new markets has been determining the value proposition, notably for food processors and consumers. The industry has exposed some knowledge gaps. For example, the pulse industry does not have complete information on the quality of pulse protein relative to better-known proteins like whey or soy. So, it is difficult for food companies and regulators to know what health claims could be made with products reformulated to include lentil or pea protein.

Pulse Canada has amassed substantial information on nutrition and health impacts, but it is often not in the form consumers, regulators, or the food industry require. Data on nutritional value is available for raw, uncooked pulses – but consumers don't eat them in that form. The addition of an 'ingredient' strategy to an already successful 'commodity' strategy is creating new opportunities for Canadian pulses. Innovation has to be linked to consumer use and how the food system is going to apply it.²¹

is doing what it can to prepare for a changing climate on the Prairies, such as supporting R&D in drought resistant cultivars.²² A culture of supporting publicly-funded research does not necessarily translate into a culture of commercialization.

Bold objectives: If Canada is to tackle the dual challenge of arresting the fall in Canadian food product exports and rise of foreign food imports, then innovation needs to be systematically adopted at every stage across the agri-food sector. Innovation is needed in the sector's production methods, manufacturing practices, packaging, and even in the ways players in the sector relate to one another; they need to work collaboratively in order to add value to the products they produce and supply.

Canada has a choice between incremental change (status quo) or taking a bold approach to innovation. Imagine if each food system could design the optimum innovation machine to accelerate new products. What would it look like? For instance, why shouldn't we produce a higher nutrient-loaded tomato, or be the country that significantly increases wheat yields using the same amount of water and nutrients? For government, it must decide what its purpose is in supporting innovation. Should it be to enable Canadian companies to be first adopters of new agri-food technologies? Such objectives can drive diverse interests together to support broad common objectives.

New innovation centres: This discussion paper proposes the creation of new innovation centres that would change the way food systems innovate. The centres would be largely industry-driven and tailored to each food system. The innovation centres would be market-responsive (although if public funds are utilized proper governance requirements would be essential). The centres would support pre-competitive research and foster collaborations to minimize innovation risk and speed product development; stakeholders would work together to support market opportunities. The centres could also be a catalyst to create proprietary collaborations, such as developing a healthy new food innovation or a sustainability practice that improves cost-efficiencies.

Designing innovation engines for the future has many possibilities. One centre might have a biomass focus which may include an agri-forestry innovation capability. Another food system's centre may be exclusively focused on innovation that leads to export opportunities; this approach might involve developing a "global city strategy" which could focus on new product development and marketing that targets some of the world's largest urban markets. Governments could also develop new approaches to support these centres, such as fostering a new, more independent consortia of government-research institutes to focus their combined capabilities on food innovation. This could include a concerted effort to link agri-food and nutrition research in Canada. Such an approach could lead to more intensive work into the effects of food and bioactives, which could help support food innovation research, clinical trials and joint health-agri-food collaborations.²³ Many innovative research topics could be considered.

The Vineland Research & Innovation Centre

Vineland is a new public and private sector-funded, industry-driven research and innovation cluster. The organization was designed to give the Canadian horticultural industry a competitive edge in both domestic and export markets. Its aim is to add value to horticulture products, develop new technologies and products, and facilitate access for industry to new innovations. Vineland has over 40 researchers in three major disciplines: consumer insights and product innovation, applied genomics, and horticultural production systems.

Example: Working with a major food processor, Vineland has been charged with identifying mushroom strains that are nutrient dense or have higher vitamin levels for use as an ingredient in processed mushroom products. Vineland and the food processor have partnered with a major mushroom producer and an input company to identify mushroom spores and production methods that will lead to a nutrient dense mushroom. Mushrooms are a major industry in Ontario, worth about \$140 million a year and accounting for about 50% of the Canadian market.²⁴

Goal: Accelerate food system innovation

Targets

Food system innovation (“smart”) centres for every crop/livestock type.

Implement by 2018

Concept

These not-for-profit, co-funded, fully integrated organizations would be designed to create innovative and profitable opportunities for each food system. By bringing value chain participants together, the centres would make innovation more efficient and market-driven.

Elements

Industry-led & supported: Food system centres are industry-led and co-funded with private and public funding with measurable strategic goals and governance structures.

Systems-focused: Clear objectives are established by each food system with input from key stakeholders within each commodity/livestock food type. Each centre is tailored to meet the innovation needs of its respective market requirements. The centres are a place to bring the disciplines together (health, sustainability, information-technologies, data-management, advanced materials, nanotechnologies, etc.). They are a melting pot of ideas to generate creative thinking and resolutions. Individual centres could also pair up and work together on common research where there is a mutual benefit.

Mandate: Create profitable opportunities within the individual food systems. Provide complete concept innovation by creating a better “line of sight” on all steps required to bring a new product to the marketplace, such as from genetics, breeding, growing/nurturing, product-design, packaging, etc. The centres create the opportunity for food system champions to galvanize the players, focus the work and drive outcomes.

Pre-competitive advantages: A broad pre-competitive plan for each food system identifies the market data, consumer trends, science and technologies needed to support idea-creation within each system.

Risk mitigation: Having key players at the table to design the innovation-to-market plan would help to mitigate innovation risk. Actual product development might become a negotiated proprietary opportunity for participants. Including stakeholders in either pre-competitive or competitive initiatives (such as involving producers, researchers, input providers, distributors, processors and retailers) would create new opportunities for collaboration and help to build trust among value chain relationships.

Regulatory mentors: Regulatory champions or mentors in each centre provide advice on the regulatory-pathway or process to achieve approvals (without compromising the regulatory process itself). It is a mutual learning opportunity; industry feedback is used by government to help streamline the regulatory process.

Government alignment: Public institution R&D capabilities and objectives across multiple departments and jurisdictions align to support agri-food innovation. The focus on private sector pre-competitive research also enables publicly-funded researchers to connect to work undertaken by the centres and therefore be more relevant to early stage product development research conducted by industry.

Full support functions capability: A full slate of commercialization support functions are linked to each centre, such as providing intellectual property expertise, technology transfer/technology in-licensing, market assessment, legal, and financial expertise.

Technology scouting: Insights from abroad provide help to identify global best practices to learn from and adapt to Canada.

Metrics: Each centre would identify success indicators and targets.²⁵

Endnotes

1. Agriculture and Agri-Food Canada, 2010. Chart shows the changes in the relative shares of Canada's total R&D effort by sector; GERD refers to "gross domestic expenditures on R&D." Government-performed R&D represents 9% of the national total, behind the business sector (54%) and universities (35%).
 2. *Global Competitiveness Report*, World Economic Forum (2010-2011). Canada's rank fell from 18th to 19th in 2008-2009. <http://www.weforum.org/pdf/GCR10/Report/Countries/Canada.pdf>. The country's rank for university-industry collaboration fared better, at 7th.
 3. Business enterprise expenditure on R&D, 2008, as a percentage of GDP, OECD, Main Science and Technology Indicators Database, March 2010, as reported in *Measuring Innovation: A New Perspective*, p. 76.
 4. Although Canadian government spending on agricultural R&D compares favourably with the US in 2009. *Competitive Advantage of the Canadian Agri-Food Sector*, Dr. David Sparling, Richard Ivey School of Business, and Dr. Shelley Thompson, SJT Solutions, CAPI, 2010, p. 4.
 5. *Competitiveness of the Canadian Agri-Food Sector*, David Sparling and Shelley Thompson, CAPI, 2010. p. 6.
 6. Extracts presented at the CAPI Leaders Summit (February 2010) on these case studies (*Advancing Canada's Food and Health Agenda: Case Studies in Healthy Foods*, Richard Ivey School of Business, CAPI, 2010).
 7. OECD PSC Database for Canada, 2010, in Stephen Clark and Shelley Thompson, *Benefits and Distribution of Government Spending in the Agri-Food Sector*, CAPI, 2010 (figures are rounded).
 8. While NSERC's research target priorities do not include agri-food specifically (as they too align with the S&T strategy), NSERC research has potential application to the agri-food sector, such as in bio-mass and bio-energy, water contamination, and product life-cycle assessments/design. (For NSERC priorities, see Press Release, November 29, 2010.)
-

9. See mention of this subject in *Challenging Our Past: Preparing for the Future*, CAPI Synthesis Report, 2010, p. 32. The S&T Strategy's four areas of focus are: environmental science and technologies, information and communication technologies, health and related life sciences and technologies, and natural resources and energy. However, the agriculture and agri-food sector depends inexorably on high technology and the sciences as a basis for innovation and this sector's interests might be broadly captured under these four domains. In fact, in a 2009 Progress Report, it was noted that investments in applied genomics research benefit Canada's agriculture, crop and bioproduct sectors.

10. *Policy Goals, Objectives and Instruments in Other Jurisdictions*, Harry de Gorter and Erika Kliauga, Cornell University, 2010, CAPI, pp. 9, 12.

11. *Regulations helping Canadian Agri-Food Competitiveness: Summary Report*, Toma & Bouma Management Consultants, 2010, CAPI, pp. 8-9, 11; the VQA brand as a symbol of quality was supported by regulatory standards.

12. *Benefits and Distribution of Government Spending in the Agri-Food Sector*, Stephen Clark and Shelley Thompson, CAPI, 2010, p. 7.

13. National Research Council, website: <http://www.nrc-cnrc.gc.ca/eng/dimensions/issue1/clusteroverview.html> accessed November 29, 2010. Of the 11 NRC clusters, Charlottetown's Nutrisciences & Health cluster is focused on nutraceuticals and dietary supplements and Saskatoon's Plants for Health and Wellness cluster includes a focus on nutraceuticals and functional foods.

14. Jeff Schmalz, Soy 2020, Interview, CAPI, 2010; *Advancing Canada's Food and Health Agenda: Case Studies in Healthy Foods*, Richard Ivey School of Business, CAPI, 2010, p. 22.

15. Canadian Agri-Science Clusters Initiative, Descriptions, Growing Canadian Agri-innovations Programs, Agriculture and Agri-Food Canada [2010]; AAFC also invests in smaller scale initiatives, known as Developing Innovative Agri-Products (DIAPs). Invest in Canada also profiles various agri-food "clusters"; see website: <http://investincanada.gc.ca/eng/industry-sectors/agri-food/agrifood-map.aspx>

16. *Benefits and Distribution of Government Spending in the Agri-Food Sector*, Stephen Clark and Shelley Thompson, CAPI, 2010, p. 7; JoAnne Buth, President, Canola Council of Canada, Interview, CAPI, 2011.

17. *Policy Goals, Objectives and Instruments in Other Jurisdictions*, Harry de Gorter,

Erika Kliauga, Cornell University, CAPI, 2011, pp. 6, 13-14.

18. Food Research for Prevention of Chronic Diseases: Opportunities and Barriers in Canada, Harvey Anderson and Christina Wong, Department of Nutritional Sciences, University of Toronto, Presentation to The Human Nutraceutical Research Unit, April 23, 2009.

19. Collaboration must respect the requirements of the Competition Act. In order to facilitate such pre-competitive cooperation, its requirements may require review.

20. Flax research was referenced in the chapter on Good Food Citizenship; other work in the food-health domain is addressed in the chapter on enabling regulations. The Canadian Institutes for Health Research supports research in food sciences, nutrition, and population health, among other areas, and its work has lead to collaborations with commodity sectors, such as in the field of antibiotic resistance.

21 Gordon Bacon, CEO, Pulse Canada, Interview for CAPI, Pamela Laughland, Richard Ivey School of Business, 2010.

22. *Adapting Agriculture to Climate Variability*, Executive Summary, CAPI, March 2010.

23. *Regulating Health Claims in Canada – Current Status*, Christina Wong and Mary L'Abbé, Department of Nutritional Sciences, University of Toronto, December, 2010, CAPI, p. 5. The authors present the need for a network of nutrition research centres in Canada so support such innovation.

24. Presentation by Jim Brandle, CEO, Vineland Research & Innovation Centre to the CAPI Convergence Meeting, November 2, 2010.

25. Overall, the value chain innovation centres might consider benchmarking progress in terms of improving Canada's innovation potential. One example: Canada's ranking in the World Economic Forum Global Competitiveness Report is a benchmark for the state of "cluster development." Currently, Canada sits in 11th spot under such a ranking, although this is an economy-wide ranking and not dedicated to any one sector.

3. MANAGING RISKS ACROSS FOOD SYSTEMS

Reduce/mitigate risk across food systems

Shift from “income” focus

Six pan-sector risk categories

Render Agri-Stability unnecessary

Traceability for every food

Annual Ministerial risk scorecard

Summary

Each agri-food player faces risks. These risks can affect the level and stability of returns on assets employed, and have resulted in large income swings, particularly in the (non-supply managed) primary production sector. They can shrink or even shut down sectors.

Traditionally, the concept of “risk management” referred to primary agriculture. However, risks can cascade across food systems. Since food systems intersect, policy frameworks need to develop a more comprehensive response to risk management. A competitive and profitable agri-food sector requires reducing and mitigating risks across food systems. This chapter presents a new way of categorizing several pan-sector risks. Individual value chain players (i.e., input providers, producers, processors, distributors and retailers) need to work with government to address these over-arching risks. “Systems-wide” approaches are also worth consideration. For example, an effective national traceability program for all commodities could forestall potential disease and food safety consequences and enhance Canada’s brand.

Improving the efficiency/effectiveness of farm programs, such as Agri-Stability, is essential. This measure would render certain producer-directed risk programs less necessary. This will free more funds for innovation – a catalyst to generate new product, market and income opportunities. Investments in innovation are proactive, as compared to reactive farm income stabilization payments that direct dollars to pay for the consequences of past performance.

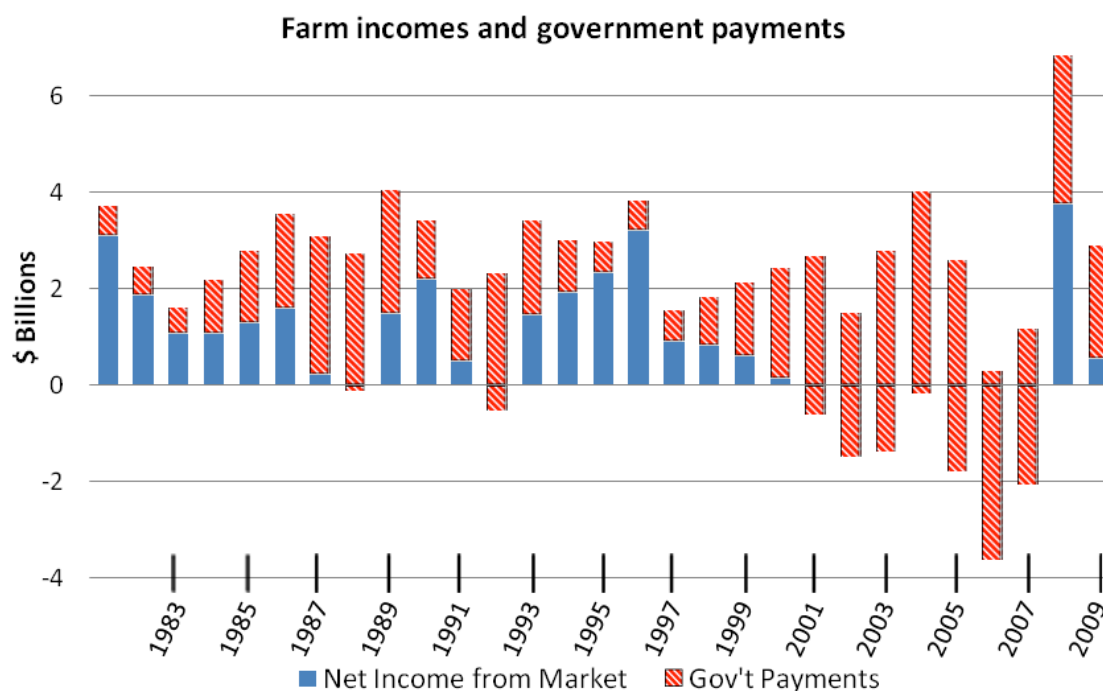
Facilitating these changes will depend on new relationships within food systems. Genuine collaborations are needed. Food systems need to improve their information-sharing and collaborative efforts – through working together on new value-added products or targeting new market opportunities – so that all can benefit. Food systems need to focus on ways to share in the upside – the rewards of success. (Deepening collaboration is also addressed in the chapters on Good Food Citizenship and Innovation.) To ensure progress and transparency, an annual risk scorecard is required to measure and track key actions.

What's Not Working

Net farm income: Seven times in the past 10 years net farm income from the market was negative. (See chart, “Farm incomes and government payments”).¹ Governments have responded, in part, by offsetting the impact of risks facing this segment through Business Risk Management (BRM) programs.² Over the past 10 years, producer support spending represented on average 59% of total spending on agriculture by federal and provincial governments. This perpetual support,³ in the range of \$3.8 billion per year, does not seem to resolve aggregate farm income problems.⁴ With the bulk of the agri-food budget focused on BRMs, investments in R&D, innovation, market development and market access are limited (an average of 18% of total spending over the past 10 years). Canadian farms have also acquired higher debt levels than their US counterparts, a source of financial risk⁵ (and any significant future increase in interest rates will have significant impact on sector earnings).

A perspective on some of the risks and issues facing the sector:

Climate change: There are potentially significant and variable risks as well as opportunities with this issue. The Prairies could see increased risk of desertification by 50%. Yet, for certain crops, yields could increase by 40% or more. Farm incomes could be significantly affected by droughts, pest and disease.⁶ Over the past several years, governments have contributed an average of \$3 billion per year in direct agriculture income support payments related to droughts and poor growing seasons in the Prairies.⁷



Regulatory framework: Canada's agri-food sector suffers for lack of a modern regulatory framework. Compliance costs, administrative complexity, and in some cases the very need for certain regulations are inhibiting innovation and putting Canada at a competitive disadvantage.

For the processing and retail sectors, getting new products to market as fast as possible is vital to competitive positioning and responding to the consumer. Government decision-making and regulatory approach play a key role in facilitating or inhibiting this process. Business needs government to be responsive at different stages in the process, through means such as:⁸

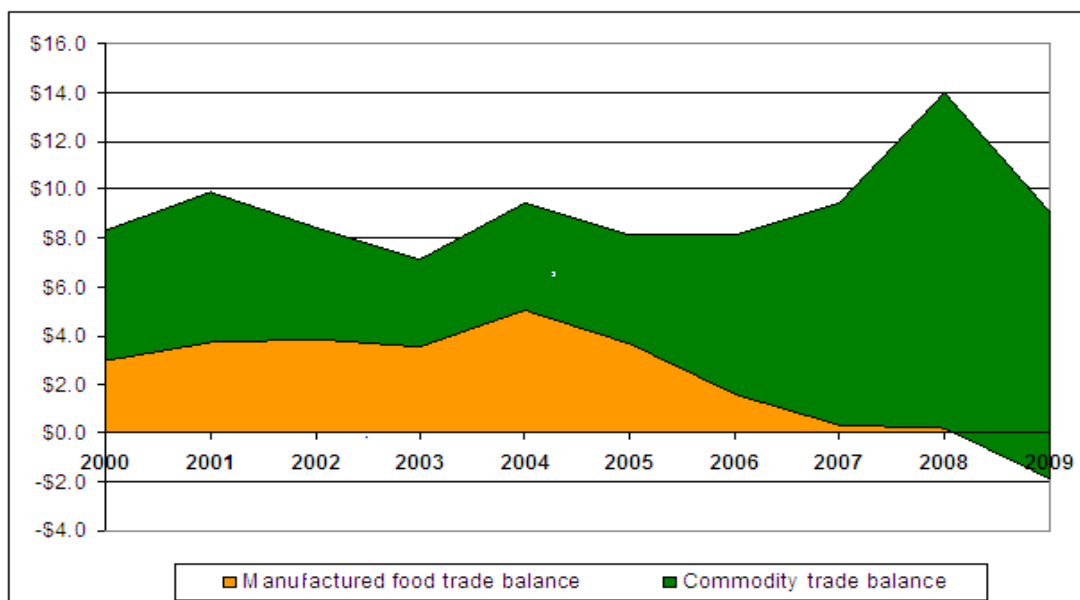
- ▶ From idea to concept: clear standards and definitions are needed (e.g., defining “all natural”);
- ▶ From concept to new product: clear rules are needed on health claims and packaging; consistency with major competitors is important to this sector;
- ▶ From product launch to tracking: timely approvals, consistent enforcement and removal of non-compliant products.

Moreover, other countries' regulations and restrictions can have profoundly negative impacts on Canada's exports and its ability to access markets. The zero-tolerance testing for genetically-modified crops has had serious repercussions for grain exports to the EU; in the US, the country of origin labelling (COOL) requirements for exports to that country have affected the competitiveness of Canada's beef and hog sectors.

Trade balance: As an indicator of what is facing Canada, the country has lost its positive agri-food trade balance in manufactured food products. The growth in the trade balance on commodities (to over \$11 billion⁹) has offset the decline in the trade balance on manufactured food and beverage products, thereby providing for a slightly positive growth trend in the overall trade balance of the agri-food sector to just over \$9 billion for 2009.¹⁰ (See chart: “Increases in Commodity Trade Balance”.)

Processing sector: The processing sector faces a set of risks that impacts its viability, as well as the viability of others in the value chains (as noted in Chart 1). The rise of food imports into Canada is revealing. Canadian processors face several issues, such as higher per unit cost structures that are due, in part, to size of operations and critical mass. This results in a loss in domestic market share, creates incentives for consolidation, and results in job losses in the sector, particularly when closures occur in rural Canada. This restricts access to processing capacity. The appreciation of the Canadian dollar has implications for the sector as a whole, lowering returns to exporters and requiring processors to compete with lower cost imports. Some specific examples include:¹¹

**Increases in Commodity Trade Balance Offsetting Declines
in Manufactured Food Trade Balance**



- ▶ **Soybean processing:** Scale is required in the processing sector. Without critical mass in the availability of specialty soybeans in a province such as Ontario and the annual volumes processed, a specialty soybean processing facility is not feasible. Without necessary scale, the opportunity is limited for value-added soybean components in supplying local food and export markets. As a result, less value is created in Canada as resources are used to supply export soybeans or commodity crush beans.
- ▶ **Beef/Pork processing:** When compared to competitors, a variety of macro-factors affect the beef/pork processing sector, such as unique regulatory costs within Canada¹² (e.g., the much higher costs incurred to deal with specified risk materials), labour costs and labour availability and productivity issues due to scale. These business risks also affect farmers supplying raw materials for processing.¹³
- ▶ **Horticulture processing:** The processing capacity for horticultural crops has decreased, which also creates a farm sector risk, resulting in loss of markets and lower returns. This kind of risk can be reduced through means such as investments in IQF, or individual quick-frozen processing. Whether processors will take on this investment is based on their assessment of marketplace risks and the size of the market opportunity.

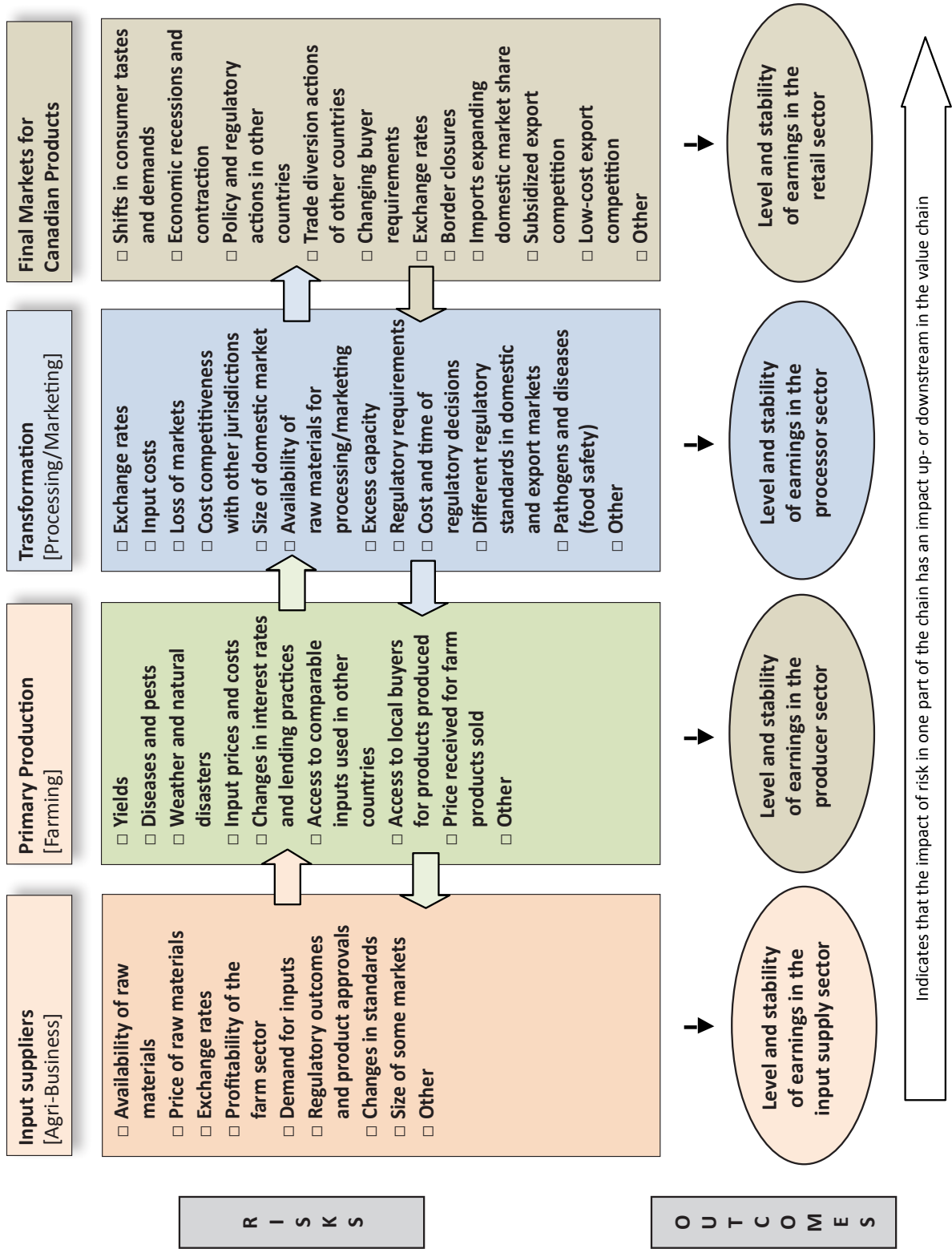
Overall, several issues need to be addressed:

- 1) **Program focus:** Much of the current programming is focused on income risk for producers (and there are good reasons for this; for instance, producer risks can be significant and unique, such as from weather-related catastrophic events).
- 2) **Income risk:** “Incomes” risk is an outcome of many types of risk factors, including those generated from across the value chain (as portrayed in Chart 1).
- 3) **Risk profiles:** In the farm sector, programming does not adequately reflect the risk profile, aside from crop insurance programs in the farm sector.
- 4) **Reactive vs. proactive:** Also in the farm sector, the current approach to risk appears to be largely reactive, not proactive, as it offsets the financial impact of a multitude of risks that have occurred rather than helping to reduce and mitigate risks.
- 5) **Cascading impacts:** Across food systems, blockages can have a cascading impact on the prospects and viability of different food systems, and their ability to respond to the marketplace.
- 6) **Clear policy objectives:** The policy development process should begin with clearly defined goals and objectives. Current policy objectives are not specific or measurable, and many policy objectives compete with one another.¹⁴

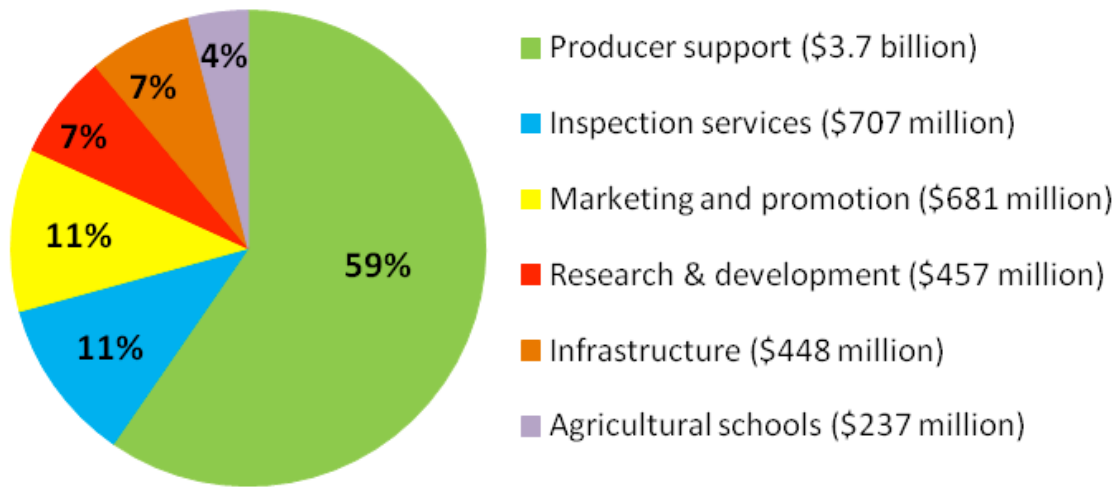
What's working

- ▶ The BRM program does provide individual producers with a farm income safety net.
 - ▶ The Agri-Stability program design (relating to the reference margin) does not mask longer-term market signals, thus indicating to producers a need to change their production mix to maximize earnings from the marketplace.
 - ▶ Crop insurance premiums paid by farmers are subsidized, are actuarially-sound and reflect risks. Privately funded programs such as hail insurance complement the current programs.
 - ▶ Some provincial governments have developed price insurance programs that utilize private sector risk management tools, such as the futures market.
-

Chart 1 – Risks Facing the Food Supply Chain (Traditional Perspective)



Distribution of the \$6.3 billion annual average agri-food spending by federal/provincial governments (over the last 10 years, 2000-2009)¹⁵



What's Needed (A "Food System" View)

Risks need to be managed across food systems. Chart 2¹⁶ portrays six broad categories of risks potentially relevant to each segment in individual value chains. The brunt of any one risk can hit individual segments and operators hard, but the repercussion can ripple up or downstream across the value chain. In short, risk carries over to other value chain segments in varying degrees. Solutions have broad benefits as well. (For instance, it is recognized that expanding Canada's bilateral trade agreements is a means to mitigate US border access risk – by diversifying export markets.) This section outlines how several proactive approaches can be part of a renewed risk management approach.

The positive payback on R&D and innovation: On average, nearly 60% of agri-food program dollars are expended on BRM type programs. The amount devoted to "R&D" is about 7% of overall agri-food spending (see pie chart: "Distribution of annual average agri-food sector spending"). However, the benefits of public spending in this area far exceed those from spending on income support programs.¹⁷ The economic literature indicates that, at best, BRM program benefits equal the program costs.¹⁸ Such a benefit/cost outcome suggests that this risk management approach requires review. The literature also reveals that agricultural R&D yields a much higher 10:1 benefit-cost ratio.¹⁹ Research and development, and supporting innovation, needs to be a priority.

“Bio-innovation”: Bio-materials/products/fuels present important productivity and profitability opportunities. Producers such as grain growers, oil seed producers, and feedlot operators are put in a stronger financial position when able to generate revenues from bio-products (e.g., using soybeans, canola and rendered animal fat for biodiesel) and from managing costs (such as to mitigate fossil fuel energy dependence). This is an evolving marketplace: other agricultural biomass materials and non-food based materials (such as corn cobs and other agricultural by-products) can further provide producers with new markets. Diversifying revenue streams and reducing operating costs will mean less potential pressure on support programs.²⁰

Fossil fuel dependence: Food production depends on fossil fuels. The prospect of higher energy prices has significant impacts on fuel and inputs derived from fossil fuels, such as fertilizer. Reducing fossil fuel dependence with renewable energy will become increasingly attractive. (See box story: “A self-sustaining farm.”)

Traceability & food safety: The current policy framework recognizes the need to reduce bio-security risk and actions to advance traceability.²¹ In a future food world, large retailers are expected to want to demonstrate the source of every commodity. Retailers are responding to their customers. Consumers want to be assured of the quality and safety and even the origin of the food they consume (but they are not likely to want to pay for this information). Product safety is vital to producers, too; it is a matter of their livelihood and access to markets. Assuming a leadership position on effective traceability is advised. Traceability should extend to every commodity.²² However, traceability requires practical implementation to be cost-effective across a food system. Cost-benefit analyses are required so that effective and efficient programs can be developed; a traceability program needs also to be designed so that it does not, inadvertently, constrict new or innovative products or commodities from being introduced. Principles need to be established by industry and government to capture these important concepts and to guide implementation. Best practices need to be considered, such as possibly adjusting the approach by commodity and looking to industry certification (and independent audit) protocols. (Such market-driven programs have been developed and have demonstrated responsiveness to consumer expectations.) A streamlined program is also required so to not add complexity for producers, processors and retailers who work across jurisdictions. A workable traceability program also presents a branding opportunity, if done right. It can demonstrate Canada’s responsiveness and superior food quality to consumers. Moreover, the data generated from traceability programs could also become a source of market intelligence for food systems (provided privacy is maintained). Food systems need to consider how these developments can enhance market positioning.

A self-sustaining farm

Creating a self-sustaining farm that produces its own fuel and fertilizer, and controlling such input costs, is achievable. In New Brunswick, one dairy farmer built a biodigester that uses dairy manure and on-farm organic waste to produce biogas and electricity. Waste is now converted into a high-quality fertilizer, which is used on-farm and sold to outside buyers. At full capacity, the biodigester will reduce GHG emissions by 16,000 tonnes per year and generate enough electricity to power 200 homes.²³ This farmer previously viewed milk as the main source of farm revenue. Now, a dairy cow creates value through energy and fertilizer as well.

Response to climate change: Farmers have long been adapting to climatic conditions. But adapting to the risks associated with extreme, frequent and significant shifts in weather and climate is challenging. Governments can help farmers adapt by creating incentives to adopt leading technologies, biotechnologies and beneficial management practices (BMPs). As well, investments in R&D and improved private-public sector coordination in science and technology can help position the sector over the longer-term. These incentives and investments can deliver effective adaptation solutions, such as improved drought-resistant crops needed to cope with water stress. The chapter on Sustainability further addresses approaches to address climate change and weather risk.²⁴

Sustainability & market access: Increasingly, commercial producers are expected to comply with emerging sustainability standards set by major processors and retailers. Many commercial producers will need to become compliant. The optimum response for producers could be to seek out those practices (such as improving water use/impacts) that both improve resiliency to climatic stresses and comply with emerging sustainability standards. Given the demands on farmers to adopt environmental requirements, at issue for producers and governments is the matter of who pays for the cost of compliance.²⁵ Adherence to retail standards is a cost to ensure market access (and these programs also drive efficiencies of input-use at every level).²⁶ However, the issue becomes complicated when producers are asked to meet environmental standards to achieve societal objectives, such as protecting watersheds or the water supply for downstream urban populations, or maintaining woodlots over converting lands to high valued crops. This example demonstrates the systems-impact of issues. (This matter is also addressed in the chapter on Sustainability.)

Food system collaboration: Creating new market opportunities, adding value to foods, minimizing innovation risk and generating mutual economic benefits is a winning combination that needs to occur in every food system. Mutual advantage requires embracing collaboration and building trust among value chain segments. The chapters on Good Food Citizenship and Innovation describe potentially successful approaches for the sector (see box story: “Collaboration for opportunity”).

BRM programs: The BRM program provides producers with a farm income safety net. To improve the efficiency of the use of public funds, certain changes are warranted to the Agri-Stability program in particular:

- ▶ **Premium rates:** Program premium should be adjusted to reflect farm specific risk levels; actuarially sound average premium rates can be higher than current levels, while retaining an element of government subsidization.
 - ▶ **Moral hazard:** Moral hazards should be eliminated so that farm operations do not engage in behaviours that would not likely occur in the absence of this government program.²⁷ The government could change this program design feature by making premiums reflective of specific farm type risks, and creating premiums that reflect actuarial considerations. With a re-design, the premium for a monoculture operation would generally be higher than for a more diversified operation. Taxpayer dollars would be saved for redeployment in other areas, such as innovation support, even as farms continue to receive the same level of income protection.
 - ▶ **Private sector tools:** Private sector risk management tools are underutilized and include futures, insurance, vertical integration, and production contracts.²⁸ Forward price contracts lock in operating margins and the options market limits downside risk, without locking out upside market potential. Today, there appears to be little incentive for private sector involvement in many areas, given the subsidized premium structure of the current programs. Publicly funded risk management tools should not crowd out private sector solutions.
 - ▶ **Public private partnerships:** Some provincial governments have developed price insurance programs that utilize private sector risk management tools, such as a futures market.²⁹ A public-private partnership model would likely be required in many areas due to systemic risks in primary production.³⁰ For this reason, government is required to be the reinsurer.
 - ▶ **Policy clarity:** Clearly defined and measurable policy objectives are required.
-

Collaboration for opportunity

In the highly competitive grocery business, retailers are always looking to differentiate themselves. A consumer is worth about \$6,000 to a retailer. This is the motivation to deliver high-value, innovative products. Collaborative approaches can create profitable opportunities across the value chain. Potatoes provide a compelling example.

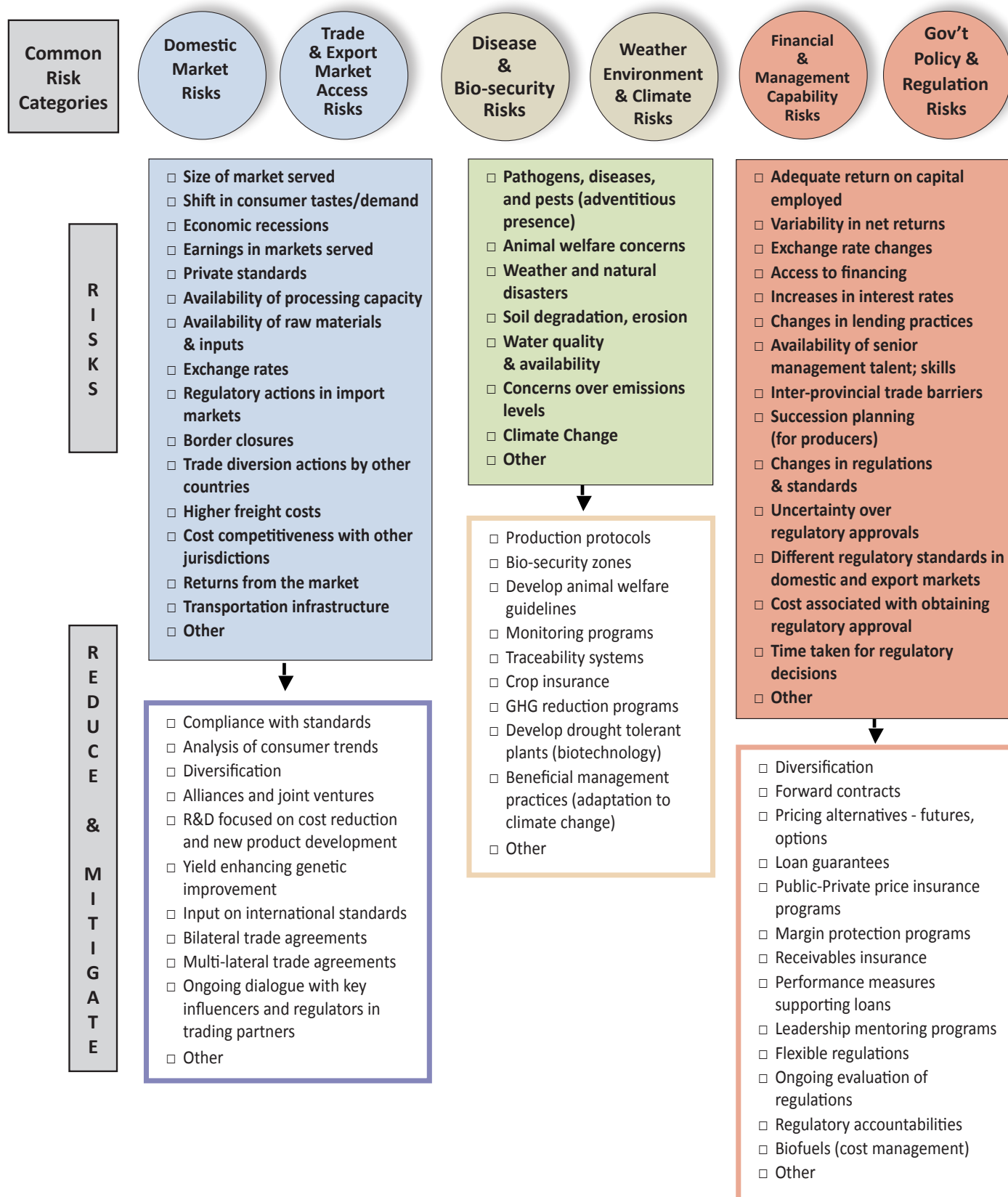
Faced with rising operating costs, the PEI potato industry sat down with retailer A&P to brainstorm solutions. Together, they decided to “go gourmet,” offering the best variety of potatoes for mashing, frying, and baking. This meant potato farmers would spend more resources sorting. But retailers promised special merchandising. Metro, for example, has installed a light-shielded overhead display with a pamphlet describing the variety of potato. Consumers have responded. Sales of the specialty potatoes, which capture premium prices of up to \$1.39/lb, have been strong. This success is attributable to the willingness of both retailers and producers to invest and commit from the outset. PEI potato farmers have since formed a co-op and have moved into more value-added products, developing complementary cooking spices and sauces. This provides a point of differentiation for both retailers and producers.³¹

In short, a new, more balanced and effective risk management strategy that includes improved program design is required. Farm incomes would still be protected, using a variety of risk management tools. This way, with structured reductions in BRM, funding can be reduced and redeployed to higher return areas, such as R&D, innovation and promotion. This will ultimately bring financial benefits both to producers and the value chain, given their inter-dependence. But for such a shift to succeed, food systems need to work and innovate collaboratively so that the market reward is shared. (Refer to the chapter on Innovation and the proposed innovation centres.) Each food system needs to work together to identify the cumulative risks facing their respective system and to develop new strategies and innovation approaches to respond to them.³² (See Chart 2).

What's Next

In the area of risk management, this paper proposes establishing goals to improve the linkage between policy and risk in the value chain. The associated targets and suggested timing are noted below. CAPI's plan is to engage a dialogue and work with sector stakeholders to develop a risk management framework. This process will identify food system risks and appropriate risk mitigation strategies and tools/instruments to address these risk areas. Methods to improve the effectiveness and efficiency of farm-focused BRM programs will be explored. An annual “Risk Management Report Card” for food systems should be introduced by government as an annual reporting requirement for ministers of agriculture and food.³³

Chart 2 – Reducing and Mitigating Food System Risks (Examples are indicative)



Goal: Better risk reduction and mitigation strategies

Targets

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Best-in-class risk reduction/mitigation strategies for integrated food systems 2. For producers, render BRM programs less necessary (except crop insurance and emergency payments) in a structured approach by making stabilization support programs more efficient and thereby incrementally shift funding toward “innovation” across the value chain 3. Ministerial Annual Risk Management Report Card | <ol style="list-style-type: none"> 1. Commencing in 2013 for completion by 2018. 2. Tiered dates, commencing 2013. 3. Commencing annually 2013. |
|---|--|

Concept

Governments pay considerable attention to the “income risk” faced by agricultural producers, and with good reason. However, the income challenges producers endure remain unresolved, as demonstrated by the existence of perpetual risk management programs. The consequences of risk can have repercussions up and down value chains. Policymakers need to manage and mitigate the many component sources of income risk and to take a broader view of risk across food systems.

Agriculture should be treated as a business.³⁴ Government policies should not assume the risk of producer decisions. Government risk responses should not crowd out private risk management solutions. A structured approach is required to achieve these outcomes and farm sector viability. Assuming a more proactive response to risk also includes investing more funds into R&D, innovation and marketing. Encouraging collaborative relationships and creating better links between policy objectives would ensure that creating opportunities is as much a priority as managing risk.

Elements

Best-in-class management of commercial agriculture & value chain risk by 2020:

Components of “income risk”: There are many issues facing food systems that contribute to income risks including disease risk, weather risk, price risk, food safety risk, market access and responsiveness risk, currency risk, inputs risk, regulatory risk, trade action risk, other country policy risk. Policymakers need to focus on the sources of income risk.

Best-in-class approaches: Adopt best-in-class and cost effective public, market-based, and public-private approaches. For example, premiums could be established for public and for public-private partnership risk management programs that reflect risks realized by operations. A beneficial outcome would be lower expenditures required to manage risk, so that funds can be redeployed in a structured manner toward innovation (see chart below on “Targets”).

Risk identification: A stakeholder process, with supporting research, could be initiated to identify food system risks and appropriate risk reduction and mitigation strategies and tools. This process can also highlight emerging high risk developments, such as loss of market access or disease outbreaks.

Program design: Based on identified risks, the sector’s programs, policies and regulations can be assessed and modified. “Performance-driven” criteria could be considered that would tie access to funding to the adoption of best technology and best management practices, and to the diversification of revenue streams, etc. A more efficient income stabilization program (Agri-Stability) is proposed. As well, an effectively-designed traceability program is required for every commodity.

Innovation supported by more effective & efficient use of public funds and utilization of BRM dollars, thereby incrementally increasing funding toward “innovation”:

“Innovation”: Innovation is broadly characterized as including R&D and commercialization (i.e., by focusing on applied rather than strictly basic research). Innovative practices include finding ways to reduce costs, improve the efficiency and use of inputs, and diversify revenue streams. New funding for innovation must bring benefits across food systems (refer to chapter on Innovation).

Cost-benefit analysis: R&D and market-facilitating activities generate benefits that exceed the taxpayer cost. Funding in R&D and innovation is forward-thinking and represents an investment in future growth.

Proactive approach: A range of risk reduction and mitigation approaches exist. For example, by shifting to a proactive risk management approach across food systems (see Chart 2) and by instituting a more efficient income stabilization program, BRM type programs should see less demand. These “saved” funds can be incrementally directed into innovation supporting activities in a structured manner. Funding requires a shared contribution from industry.

See box story on “Targets” for a proposed implementation timeline.

Transparency: A report should be produced on progress toward improving risk reduction/mitigation priorities. Increased transparency will facilitate policy planning and industry understanding and promote constructive approaches to address risks across food systems. This paper proposes that a consolidated “Risk Management Report Card” be developed by federal/provincial departments of agriculture, and be released by federal and provincial ministers of agriculture.

Targets recognize the importance of allowing for a gradual but discernible adjustment in the funding ratio.

Changes in future BRM levels (excluding crop insurance and disaster programs) and innovation type programs:*	By 2013:	By 2018:	By 2023:
	10% decrease in BRM	25% decrease in BRM	50% decrease in BRM
	(which = 50% increase in innovation)	(which = 125% increase in innovation)	(which = 250% increase in innovation)

*“Business Risk Management” (BRM) programs have accounted for \$2.3 billion per year with total expenditures on R&D at approximately \$460 million per year (based on the average total expenditure over the last five year period).³⁵ A 10% efficiency gain in the design and delivery of Agri-Stability and Agri-Invest³⁶ by 2013 would generate \$230 million. It is proposed that this amount be directed to invest in R&D and “innovation”. These additional funds would therefore represent a 50% increase in public funding of innovation programs. A 25% savings in the design and delivery of these two BRM programs by 2018 can provide for \$575 million in additional innovation funding (a 125% increase over current expenditures). A 50% savings in BRM programming directed to innovation by 2013 provides for a 250% increase in investments in the area of innovation.

Endnotes

1. *Net Farm Income: Agriculture Economic Statistics*, Catalogue No 21-010-X; net government payments to the sector, after producer premiums: Direct Payments to Agricultural Producers: Agriculture Economic Statistics, Catalogue No. 21-015-X, Statistics Canada.
 2. Business Risk Management Programs: Agri-Insurance, also known as crop insurance, allows producers to purchase insurance-based coverage against production and asset losses. Premiums paid by farmers are subsidized but do reflect risks, and the value at risk. Agri-Stability provides margin protection for farm operations, based on the realized production margin for a tax year relative to a moving 5-year reference average. Consequently, when a farm's production margin declines below 85% of the reference margin, due to higher costs or lower revenues, a program payment can be triggered. Premiums paid by producers are low and are not reflective of the risks faced by each farm operation. Agri-Invest helps producers protect their margin from small declines (a margin decline of less than 15%). Producers make a deposit into an Agri-Invest account and receive a matching contribution from governments. Agri-Recovery is a disaster framework that gives farmers further protection by allowing government to respond quickly when disaster strikes at a regional level if existing programs cannot fully address the situation. Producers can withdraw funds at any time to offset margin declines, or invest in certain activities. In 2009, Statistics Canada reported the value of government contributions deposited into producer accounts exceeded \$357 million.
 3. *Policy Context & Rationale for Intervention in the Agri-Food Sector*, Shelley Thompson and Stephen Clark, CAPI, 2010, p. 4.
 4. Aggregate net farm income, while often quoted and used in the policy development process, is not a robust measure of farm sector performance. Other measures, such as return on assets, using accrual accounting methods based on book values (versus market values) by farm type are better measures of performance. George Morris Centre, *Farm Income Structure Series: Understanding the Issues Framing Canadian Farm Incomes and Finances*, CAPI, 2010.
 5. *Understanding Farm Debt in Canada*, George Morris Centre, CAPI, 2010.
 6. *Degrees of Change: Climate Warming and the Stakes for Canada*, Climate Prosperity Report 02, National Round Table on the Environment and the Economy, 2010.
 7. Climate Change Impacts and Adaptation for Key Economic and Natural Environment Sectors: Integrated Assessment of Prairie Agricultural Resilience and Adaptation Options, Environment Canada, website 2010: http://ess.nrcan.gc.ca/ercc-rrcc/proj1/theme2/act1_e.php#1
 8. Stages adapted from: "Food & Health: Advancing the Policy Agenda," Presentation, Nick Jennery, Canadian Council of Grocery Distributors, Food and Health Workshop, Richard Ivey School of Business, March 30, 2010.
-

9. The growth in commodity exports (and trade balance) is a combination of a few trends. Over the last 5 years export volumes have been relatively flat for grains and oilseeds, with some crops such as canola increasing and others declining, and prices trending upward (and responsible for the high 2008 value of exports). Both the volume and per unit value of beef exports have declined, while pork export volumes have been relatively constant with 2009 values increasing to be near 2005 levels.
 10. The trade balance in 2010 (to end of November) was the same as the prior year period, with the trade balance in commodities (mostly crops) declining by \$1.4 billion, which was offset by an improvement in the food manufacturing trade balance. The manufactured food and beverage products negative 2009 trade balance of \$2 billion became less negative in 2010, and with net imports of \$500 million.
 11. The comments on soybeans are covered in: *Advancing Canada's Food and Health Agenda: Case Studies in Healthy Foods*, Richard Ivey School of Business, CAPI, 2010, pp. 21-25.
 12. *Regulations Helping Canadian Agri-food Competitiveness*, Toma & Bouma Management Consultants, CAPI, 2010.
 13. The comments on horticulture and beef/pork sectors are covered in: *Competitive Advantage of the Canadian Agri-Food Sector*, David Sparling and Shelley Thompson, CAPI, 2010, pp 8-9.
 14. Sandell *et al* as quoted in Shelley Thompson, *Policy Context and Rationale for Intervention in the Agri-Food Sector*, CAPI, p. 12. Also noted in George Morris Centre, *Farm Income Structure Series: Understanding the Issues Framing Canadian Farm Incomes and Finances*, CAPI, 2010, and Grace Skogstad, *An Overview of Policy Goals, Objectives and Instruments for the Agri-Food Sector*, CAPI, 2010.
 15. OECD PSC Database for Canada, 2010, in Stephen Clark and Shelley Thompson, *Benefits and Distribution of Government Spending in the Agri-Food Sector*, CAPI, 2010 (coll.).
 16. The entries in Chart 2 for ways to reduce and mitigate risks are examples only, and are not comprehensive.
 17. In reference to such areas as R&D, market promotion, and quality assurance, Shelley Thompson, *Analysis of Returns to Program Spending in the Agri-Food Sector*, CAPI, 2010.
 18. See also Stephen Clark and Shelley Thompson, *Benefits and Distribution of Government Spending in the Agri-Food Sector*, CAPI, 2010.
 19. *Analysis of Returns to Program Spending in the Agri-Food Sector*, Shelley Thompson, CAPI, 2010.
 20. *Growing Beyond Oil: Delivering Our Energy Future*. A Report Card on the Canadian Renewable Fuels Industry, Canadian Renewable Fuels Association, 2010, p. 10. This report also referenced related US experiences with reductions in farm safety net payments.
-

21. The Growing Forward Agreement speaks of a “Sector that is Proactive in Managing Risks” and highlights being proactive on bio-security: “Preventing and preparing for risk through an animal and plant bio-security strategy; and by implementing bio-security and traceability systems.”
 22. A variety of issues are being considered by governments and industry in terms of the current work to implement a traceability system for livestock and poultry.
 23. Jacques and Patricia Laforge, Laforge Holstein, Grand Falls, New Brunswick, Interview for CAPI, Pamela Laughland, Richard Ivey School of Business, 2010.
 24. The following paper also summarizes sustainable agricultural practices to manage climate and weather risks, such as crop diversification, diversifying the farm enterprise, adopting effective land, water and ecosystem management and other farm practices. Many of the initiatives are designed to deal with drought risk, conservation tillage and a variety of production practices. “Climate Change Adaptation in Light of Sustainable Agriculture,” Ellen Wall and Barry Smit, *Journal of Sustainable Agriculture*, Vol. 27(1), 2005, p. 120.
 25. Determining “who pays” for adopting environmental measures was the subject of a research paper: *Analysis of EG&S Policy Options: Fostering Adaptation of Canadian Farmers to Climate Change and Development of a Decision-making Tool*, Eco-Ressources Consultants, with the International Institute for Sustainable Development, CAPI, 2011, p. 1.
 26. *Challenging Our Past: Preparing for the Future*, CAPI Synthesis Report, May 2010, p.17.
 27. Two of the current Growing Forward BRM principles include: (1) Minimize moral hazard and not influence farmers’ production and marketing decisions; and (2) do not provide a disincentive to the use and development of private sector risk management tools. Premiums: The Agri-Stability program’s premiums do not reflect the risk faced by farm operations. The premium of the production margin that is at risk applies equally to a farm operation producing one specific commodity such as wheat and to a farm that is diversified across sectors. As well, the low Agri-Stability premium rate does not create any inducement for farmers to reduce their net income risk. Moral Hazard: The program has a further unintended consequence: the very presence of this program encourages riskier behaviour (this is known as “moral hazard”). The result is offloading farm level income risks onto government or taxpayers. Program payouts and farm income can be enhanced (farmed) by producers having the majority of their income in one commodity. Incomes and the reference margin will be high when prices are high. Then when prices fall, large payouts are triggered based on 85% of the reference margin. In contrast, a diversified farm with a few crops and possibly a livestock enterprise may have high incomes in one commodity typically offset by lower incomes in another commodity as the farm’s reference margin is computed. The riskier monoculture operation receives more program dollars for the same premium payment.
-

28. See the OECD report *Managing Risk in Agriculture: A Holistic Approach*, (2009) ISBN – 978-92-64-07530-6.

29. Such insurance programs offer producers the opportunity to lock in operating margins before product is offered to the market, and removes the risk of unknown marketplace rewards at actual time of ownership transfer.

30. For instance, in production agriculture, if weather-induced lower yields occur in one part of a production region, there is a high probability that a number of farm operations will be making claims. Premiums are more predictable when the occurrence of one claim does not affect the likelihood of another claim.

31. Nick Jennery, President, Canadian Council of Grocery Distributors, Interview for CAPI, Pamela Laughland, Richard Ivey School of Business, 2010.

32. A report conducted for CAPI outlines a broad variety of factors affecting the competitiveness of the sector. This work, which looked at horticulture, beef, pork, grains and oilseeds, and the dairy and poultry sectors, outlined many of the pressures, risks and opportunities facing Canada, including for producers and processors. Recognizing that the challenges are often highly complex in nature, the authors emphasized the importance of R&D, innovation and pursuit of differentiation as a key way to improve competitive positioning. (*Competitive Advantage of the Canadian Agri-Food Sector*, David Sparling and Shelley Thompson, CAPI, 2010.)

33. Some of the thinking introduced in the OECD report *Managing Risk in Agriculture: A Holistic Approach*, (2009) will be considered in CAPI's approach.

34. Vibrant rural communities are important to Canada; any policies relating to “lifestyle” farming should be developed as part of rural or social policy.

35. In the recent past, approximately 92% of the federal/provincial/territorial governments' Growing Forward program was expended on BRM type programs with the balance (some 8%) directed to innovation, sector promotion, market facilitation, and traceability programs; and this ratio varies by province. (See *Challenging Our Past: Preparing for the Future*; CAPI Synthesis Report, May 2010.) This report refers to net government payments to agriculture based on an average of five year data from 2005-2009 (Statistics Canada, Direct Payments to Agriculture Producers, Agriculture Economic; Statistics, Catalogue no. 21-015-X, November 2010).

36. The 50% increase uses the \$460 million in public R&D funding as the base. The portion referenced in these targets relates to BRM programming other than crop insurance and emergency payments.

4. LEADERSHIP IN SUSTAINABILITY

One minimum sustainability standard

Create “sustainability farm plans”

National ecological goods & services program – tailored locally

Coordinate public/private S&T research

Climate change agri-food strategy by food system

Summary

In agriculture, sustainability means managing “natural capital,” such as soil, water, air, carbon, and nutrients (including phosphate), to meet demand without compromising the needs of future generations. Effective, long-term management is crucial to the production system and to the credibility of the sector.

Sustainability means being a reliable supplier of food in the face of expected global demand, resource scarcity,¹ environmental stresses, weather variability, and climate change. Canada’s role as a supplier may increase in light of climate change. Sustainability and adaptation practices are vital.

At the retail level, consumers want to be informed about how their food and ingredients are produced. Some already shop according to a product’s ecological footprints. To get access to grocery store shelves, food companies will need to satisfy corporate retail sustainability standards. The implications reach across food systems. These standards are being set largely beyond Canada’s borders. The country needs to take a more proactive approach to getting ahead of its competitors; it needs to differentiate its practices. Minimizing inputs also makes good business sense (increased productivity).

These issues are connected; environmental, economic, and agricultural objectives are increasingly integrated. Food systems need to manage natural capital, implement sustainability practices, and adapt to changes in climate and weather variability. This chapter includes ideas to foster a more integrated strategic approach (with an emphasis on improved water management). It proposes the creation of a national minimum sustainability standard, the development of sustainable farm plans, and locally-tailored ecological goods and services plans. Emphasis needs to be put on coordinated science and technology research and increased reliance on bio-solutions, among other elements. Leadership in these areas will enable Canada to be a reliable supplier of good food.

Responding to Walmart: The U.S. dairy industry story

In 2007, Walmart announced that all of its suppliers were expected to have emission reduction plans and sustainability scorecards. The US dairy industry was among the first to act – it was a matter of ensuring market access to a major retailer.

There were two options: each farm could act alone, or a sector approach could be taken. In response, the Innovation Center for U.S. Dairy was created for about 80% of the sector to address pre-competitive barriers, and to develop opportunities for innovation and sales growth. Instead of developing many different scorecards, the industry collaborated and worked toward a consistent sustainability benchmark.

To meet sustainability requirements, improvements were made to feed efficiency, reduce enteric methane and improve manure management. Management practices, not farm size, were the keys to success – generating reduced energy costs in the order of 10% and reduced greenhouse gas emissions. The initiative created convergence up and down the supply chain. The initiative is sustainable in other ways: by continuing to add value to its members, it has spurred other endeavors, such as new research within the supply chain.²

Sustainability and the Consumer

Consumer preferences: 54% of American shoppers consider environmental sustainability a factor in product and store selection.³ Sustainability and “green products” can mean many things to a consumer, from free-range chickens, to wild-caught salmon, to organic foods. It can mean reduced packaging, fair-trade coffee, locally grown foods, and low-water usage.⁴

Retailers’ response: Many large retailers are responding by implementing sustainability procurement policies (see box story: “Responding to Walmart”). Non-compliance with emerging global and national retail sustainability standards will seriously limit shelf access.⁵ Is the Canadian agri-food sector responding fast enough?

Product labelling: Most food product labels of the (near) future will likely reveal carbon footprints, water use, sustainable production practices, nutrition value, and perhaps other measures. The trend is already evident (see orange juice package image).

Environmental messaging on food product packages grew from less than 1% in 2007 to well over 4% of the new food products released worldwide in early 2009.⁶

In Canada, labels must include a list of ingredients and a Nutrition Facts Panel.⁷ In a bid to differentiate themselves, retailers, processors, and producers also promote products free of pesticides, antibiotics, and growth hormones. The product label is a busy place – and will get more complex – thanks to both regulatory and market-driven requirements. Consumers could become overwhelmed by the breadth of information and the level of understanding needed to comparison-shop.

Sustainability and Productivity

Sustainability practices:

Sustainability involves efficiency and responsibility, producing or doing more with less, minimizing costs and inputs, and reducing waste and harmful outputs. Producers, for instance, try to lower water and fuel use and minimize fertilizer and pesticide applications. Among the tools at their disposal are precision farming, integrated pest and weed management practices, restoration of ecological systems, lower irrigation spray applications of water, conversion of by-products into value-enhanced products, and genetic modification. Organic farming and no-tillage strategies that employ soil building, manure usage, crop rotation, and biological pest and weed control are also considered sustainable practices.

Agriculture systems: The livestock sector plays an invaluable role in sustainability by converting food unfit for human consumption into edible protein. The use of grass as feedstock allows farmers to introduce perennial forages in the crop rotation program. Crops not qualifying for human consumption become an additional source of feedstock. While the livestock industry faces its own environmental challenges, it plays an important role within some ecosystems in Canada. The meat and dairy systems can also make a significant contribution. Grassland covers a sizeable percentage of Canada, absorbing and storing carbon while filtering water destined for the water table. Grasslands require ruminants and other grass eaters to maintain biodiversity and a healthy ecosystem. The cow-calf industry in Canada takes advantage of this relationship. Feeding cattle, hogs and chickens in Canada historically grew out of a



The premium from stewardship

Farmers are not only producers of food and fibre; they also produce clean air, clean water and biodiversity. This view is shared by a growing number of farmers who are connected to the local food movement (also supported by government programs).

The ecological benefit can include sequestering carbon by planting native vegetative cover on farmed lands. This is a beneficial local solution to addressing climate change. Such ecological services reveals how agriculture is a contributor to environmental solutions. Renewable energy applications also create new revenue streams.

A holistic view (in southern Ontario) demonstrates the approach: restoration of native tallgrass prairie benefits grassland birds and native flowers, while many species of bees and wasps provide pollination. The deep-root grasses are good water filters and are more drought-resistant; they provide season-long feedstock for ranching and help to provide a leaner beef product.⁸

need to utilize the 25% to 35% of the crop that did not meet quality standards for human consumption. (While some feed grains are grown in Canada for this purpose, much of the feed grains elsewhere in the world have to be grown in order to raise animals or are 100% imported.)

Climate change: Climate change is controversial; the topic usually involves debate over forecasts and modeling of climatic conditions. In Canada, climate change is broadly seen as having both positive and negative impacts on agriculture, such as longer growing seasons, possible extension of good growing conditions north into the boreal zone, increased water stress, and drought risk in the southern regions of Saskatchewan and Alberta.⁹ In the Prairies (and the American Great Plains), climate and weather are seen to be increasingly variable and extreme.¹⁰

For producers and input providers, remaining a reliable food supplier will require adapting to changes in weather – which farmers generally do as a matter of course. But the prospect of significant shifts in climate patterns raises concerns that North America's current cropping systems, for wheat in particular, may not be well positioned to adapt. The prairies could see significant desertification. However, crop yields could increase elsewhere.¹¹ Minimized genetic diversity may increase vulnerability to plant diseases, insects and abiotic stress associated with climate variability.¹² "Weather and climate risk" is also an economic issue as billions of dollars in compensation are spent in response to droughts and poor growing seasons in the Prairies alone.¹³

Systems approach: While companies and producers must grapple individually with the need to be more productive and address environmental pressures, some are embracing a broader response. In the US, an initiative is underway to develop a supply chain system for agricultural sustainability.¹⁴ It is supported by many large food and retail companies, agri-food associations and conservation organizations. It has established a benchmarking method to assess environmental performance.

What's Needed

Addressing climate change and sustainability requirements while ensuring a reliable food supply demands multiple and sophisticated responses.

A Canadian sustainability standard: As sustainability standards become more pervasive, compliance costs for companies throughout the value chain may increase. From a competitiveness standpoint, some of Canada's sustainability practices (such as managing water) could be positioned as a competitive advantage. Could this be used to raise the bar on competitors? Why can't Canada be the country that sets global water sustainability standards? This prospect could lead to collaboration among the public and private sectors, including NGOs, to establish water-use efficiency standards and metrics across food systems – and promote such practices as a “Canadian attribute” that can enhance the national brand abroad. This paper proposes that Canada develop a national minimum voluntary sustainability standard to encourage compliance with best practices

Sustainability standards

McCain Foods is a member of the Sustainable Agriculture Initiative Platform, which includes some 25 global companies with collective estimated annual sales of \$300 billion. The initiative establishes principles and practices for being sustainable at the farm level, and is changing the agri-food industry.

Many of these companies compete every day against one another but the principles and practices applied at the farm level are pre-competitive in nature; this sets a baseline for ensuring sustainable and responsible food production.

To comply with this global standard, McCain Foods in Canada requires its potato growers to adhere to environmental farm plans and CanadaGap, an on-farm certified food safety program.

McCain Foods is working with its growers to deliver a more sustainable potato with a lower impact on the environment. This enables McCain to meet customer preferences, such as McDonald's, for greater sustainability of French fry supplies.¹⁵

across food systems. One challenge (and criticism) facing the sector is the plethora of performance standards. This proposed “horizontal” initiative has four objectives:

- ▶ ensure every food system is working together and benefits from advancing sustainable practices;
- ▶ facilitate compliance with prevailing standards;
- ▶ serve as a branding opportunity for Canadian practices;¹⁶
- ▶ the proposed standard must be pre-competitive in nature and not dictate requirements that, in fact, favour any firm/segment. (A potential downside is that any standard can add to the compliance burden and be used to shut out competition which is not the intent of this proposal.)

In short, this standard is intended to enhance the country’s ability to promote its sustainability practices and image.

Sustainability farm plans: As value chains become increasingly tied to meeting global and national retail standards, Canada may be well advised to expand the environmental farm plan programs to create verifiable “sustainability farm plans” (or “environmental sustainability farm plans”) to meet these new demands and derive economic benefits. Government supported programs are in place to help operators develop Environmental Farm Plans across Canada. These plans deal primarily with issues that affect individual operations. Since these programs were put into place, concerns around phosphate and nitrogen flows off farmland have become a concern, along with water use, climate impacts, and carbon sequestration in farmland soils. An expansion of these programs in the form of a sustainability farm plan that addresses these “off farm” impacts could foster a holistic approach to managing them. Any specific action on water management, for example, will also affect options for carbon sequestration and other concerns. Such plans may become useful for allocating funding to mitigate ecosystem impacts, such as those within a watershed.

Climate change: A climate change response strategy requires a systematic review due to the implications of such a strategy for program risk management, technology transfer, R&D, carbon sequestration, etc.¹⁷ A *systems approach* involves minimizing policy disconnects between agriculture and environmental policy/regulations. Responsibility for environmental issues is shared among federal and provincial governments. However, municipal levels of government also have a major role, since agricultural practices and environmental requirements often converge, or collide, at the local level. A concerted inter-governmental strategy must make Canada “climate ready” to ensure, for example, that new wheat varieties can cope with future climatic stresses.

Risk management: Extreme weather variability puts harvests at risk, in turn creating financial risks for farmers and farm support and insurance programs.¹⁸ Policies that encourage monoculture (and limit crop rotation) may generate good yields and income returns in the short term, but they are neither sustainable nor beneficial from a business risk management standpoint over the medium term. At issue is whether access to agricultural support programs should be tied to beneficial management practices (BMPs), which might encourage producers to be better prepared for weather stresses, to diversify production practices, and to adopt innovative technologies.

S&T strategy: Canada needs to coordinate its science and technology research priorities (such as plant breeding and drought resistance crops). It appears to have ceded its leadership in key areas (such as soil conservation) that are vital to long-term productivity. It needs to identify priorities in cropping systems, functional genomics, crop breeding, bio-informatics, and in-field testing capacity. Biotechnology capacity will help the country's agri-food sector cope with change.¹⁹ New collaborations between private and public sector researchers and across regions may accelerate R&D (i.e., Prairie-Great Plains research between Canada and the US).

Bio-solutions: Sustainability pays. Waste and by-products have value. Crop residues are important for enriching the organic matter in soils. But for certain production systems, the utilization of by-products (e.g., straw as a feedstock) for biofuel production may be financially smart for producers (by-products can create new revenue streams) while contributing to energy efficiency. The sector can provide solutions. One feedlot operation in Alberta, for instance, operates a "closed loop system" and turns cattle manure (from 36,000 head of cattle) into biogas which is used to produce power for the Alberta power grid. The operation provides enough power to electrify a village of 1,200.²⁰ One Manitoba potato processor has generated a new revenue stream and saved money on waste treatment costs by selling its potato waste stream to a bio-technology company; that company uses potato starch to create a biodegradable plastics resin used for packaging and injection mouldings.²¹

Ecological goods & services: Soil, water, biodiversity, and carbon represent intrinsically valuable stocks of natural capital that produce "ecological goods and services" (EGS) when managed well (see box story: "Premium from stewardship"). Deciding how to implement policies and practices that support EGS is important because such *goods* and *services* are multi-functional – they play different roles, supporting good business practices and protecting ecosystems.

A cautionary tale

The demand for water, and the acute environmental stress associated with water shortages, can pit urban and rural populations against each other in the name of “sustainability.” It’s a familiar story in many jurisdictions.

New South Wales, Australia, has suffered through a 10-year drought. Water authorities proposed a cut of nearly 40% in the irrigation allowance for farmers from the Murrumbidgee River. The dry plains region is also home to about 40% of Australia’s farm output. If the plan goes ahead, farm output could fall by up to 17%.

In Sacramento, California, a recent court decision resulted in the withdrawal from agricultural production of some 450,000 acres of prime farmland in the Sacramento/San Joaquin Rivers delta region due to the need to protect the water habitat of the delta smelt (a small fish only found in the rivers’ estuaries). Unemployment subsequently hit 40% in some farm communities. Water allocations and decision-making in the region are hampered by the fact that over 200 regulatory authorities are involved in managing the delta’s water. Forty percent of its fresh water is used by the agricultural sector, although the farm community has significantly improved its irrigation efficiency over the years (“40% more crop per drop”).

Government, society, and farmers are grappling with competing demands for scarce water resources. Sustainable farming and sustainable water for urban uses and ecological protection can present real dilemmas. How will Canada respond when confronted with similar environmental tensions?²²

Determining how to pay for EGS is complex. Neither producers nor governments want to assume a burden beyond what is expected or what they can afford. In addition, each ecosystem presents unique requirements for environmental protection and specific options for agricultural practices. Defining the problem and the objectives of any action requires an understanding of the impacts on the capacity to produce food and how to sort out what regulatory or non-regulatory actions and payment schemes will be involved.²³ A variety of ways exist to pay for and implement EGS, such as using tax credits, reverse auctions and cross-compliance.²⁴ Whatever method is chosen, the goal must be ensuring we can produce food efficiently and meet farmers’, ranchers’ and society’s environmental priorities. Urban Canada may not appreciate the impact that environmental regulations can have on the ability of farmers to produce (see box story: “A cautionary tale”).

Goal: Ensure market access, adaptation and sustainability

Targets

- | | |
|--|----------------------|
| 1. National minimum sustainability standard (focus on water) | 1. Implement by 2014 |
| 2. Create “sustainability farm plans” | 2. 2013 |
| 3. National ecological goods & services program – tailored locally | 3. 2016 |

Concept

Sustainability assessments (and efficient verification) are needed to satisfy emerging environmental footprint labelling and global/national retail performance standards. Good business practices entail reducing water and energy use, and other inputs (i.e., managing costs). In the face of a changing climate and emerging environmental stresses, new, integrated approaches are required. Adaptation is vital. Canada’s agri-food sector needs to adopt leading practices to be sustainable and competitive in the future.

Elements

Minimum sustainability standard: Develop one national minimum sustainability standard that links all players in the food system to core sustainability principles and objectives (such as having a focus on water management). This approach would be “pre-competitive” and not interfere with competitive efforts to differentiate products or companies. Rather, it enhances the Canadian brand. The standard would not be mandated, but would be a product of industry, leading NGOs, and government. It should also help supply clear information to consumers (on the product label) about sustainability performance.

Sustainability farm plans: Building on and reshaping the existing Environmental Farm Plan concept, this initiative will help producers address the off-farm impacts of their operations and demonstrate sustainable practices. The marketplace is demanding greater transparency for sustainable agriculture production. Good sustainability practices include appropriate beneficial management practices, managing risk, and deriving financial benefits (such as generating cost-savings or revenue opportunities from using by-products).

Ecological goods & services: The EGS concept involves deriving value from healthy ecosystems; “goods” being food, fuel and fibre; “services” being clean air, water purification, pollination, etc. A national program with emphasis on local delivery could promote the adoption of beneficial management practices. BMPs are needed to improve performance on sustainability, economics, and adaptation to climate change. To facilitate implementation, local or regional cost/benefit analyses of BMPs will ensure that the optimum BMPs are adopted. As well, a common methodology is required to assess and facilitate local decision-making. Such a tool can help determine who should pay for providing EGS, although this conceptual model needs validation. To encourage effective implementation, adoption of sustainability farm plans, supported by BMPs, can be “performance-driven.” Access to support programs can be contingent upon having accredited sustainability farm plans. A national EGS program is required to ensure widespread adoption of effective BMPs; given the differences in ecosystems and local producer and environmental needs, this program should be implemented locally and regionally.

Carbon sequestration: Agriculture can play an important role in sequestering carbon and needs to be included in a future offset system as part of a compliance-based national greenhouse-gas reduction program. Agricultural and environmental stakeholders need an integrated approach for considering the eligibility of agricultural sequestration practices. Carbon sequestration plays a crucial role in climate change adaptation and can be a key means of putting a value on an environmental good.

Proactively adapting to environmental stresses: Regulatory barriers need to be removed to speed deployment of new technologies (e.g., regulating substances, facilitating new seed varieties, adopting equivalency of substances from other jurisdictions, etc.). This is part of a climate change response strategy.

Coordinated innovation: Public sector R&D facilities should be mandated to seek out/develop best technologies to support adaptation to environmental change. A “horizontal approach” can bring adaptation responses out of traditional “silos”; this means more public-private sector collaboration, including working across borders (e.g., across Canada and the US to speed responses to common environmental challenges).

Food systems: As sustainability standards become more prevalent, individual food systems need to recognize the implications that such standards present and demonstrate responsible practices. Systems should work together to assess how environmental stresses and a changing climate could affect (positively or negatively) their capacity to remain a sustainable producer/supplier. As well, a food system approach can help producers identify emerging market opportunities, such as producing alternative crops to meet emerging market demands.

Endnotes

1. The world's population is expected to increase 34% to over 9 billion people by 2050. Global energy demand is expected to rise by 40% by 2030 and global food demand is expected to rise by 70% by 2050. (*How to Feed the World by 2050*, Food and Agriculture Organization, September 2009; The time has come to make the hard choices needed to combat climate change and enhance global energy security, Press Release, International Energy Agency, November 10, 2009.)
 2. Paul Rovey, Innovation Center for U.S. Dairy, Presentation to the CAPI Convergence Meeting, November 2, 2010.
 3. The U.S. Grocery Manufacturers Association and Deloitte conducted a study of consumer preferences and behavior related to the purchase of sustainable products. ("Finding the green in today's shoppers; Sustainability trends and new shopper insights", GMA/Deloitte Green Shopper Study, 2009, p. 7.)
 4. Examples of "green" products by characteristics and category (GMA/Deloitte, Green Shopper Study, p. 26).
 5. Examples of standards/practices: Loblaws is committed to provide 100% sustainable fish sourcing; Sobeys offers sustainable seafood options; a consortium of companies has launched sustainable beef production standards (Cargill, Intervet, JBS, McDonald's, WWF); McCain Foods requires potato growers to have approved environmental farm plans; Walmart has asked its 100,000 suppliers for a demonstration of their sustainability practices and has made a commitment to sell sustainable products.
 6. Environmental messaging on packaging grew to 4.6%; sourced from Pulse Canada, *Pulses: Providing Solutions*, Annual Report 2010, p.6.
 7. The Nutrition Facts Panel identifies 13 nutrients and includes calorie information and the percentage of daily value of foods, nutrition claims information and new information as well, such as allergens in foods. Food and Nutrition, Food Labelling, Health Canada website, December 2010 (<http://www.hc-sc.gc.ca/fn-an/label-etiquet/index-eng.php>). There are additional food label requirements; see the Canadian Food Inspection Agency's website: <http://www.inspection.gc.ca/english/fssa/labeti/labetie.shtml>
 8. The Norfolk ALUS Project, Bryan Gilvesy, Edible Toronto, Summer 2010; see for example: Local Food the Focus in Hastings County, Press Release, March 29, 2010, Ontario Ministry of Agriculture, Food and Rural Affairs.
-

9. Assessments of climate change show a range of potential positive impacts (e.g., increased productivity from warmer temperatures, possibility of growing new crops and accelerated maturation rates, etc.) and negative impacts (e.g., increased insect infestations crop damage from extreme heat, planning problems due to less reliable forecasts, etc.) which means an uncertain net impact. (Workshop on Climate Change, Agriculture and Agri-Food Canada, Ottawa, March 2010.)

10. *Adapting Agriculture to Climate Variability*, Executive Summary, March 2010 (see the document on CAPI's website); a summary of meetings held in Winnipeg and Kansas City in March 2010. Another similar initiative was held in August 2010 in Syracuse to examine the climate and agriculture issues for eastern North America. These efforts were supported by a broad-based working group of government, industry and academic partners (the Western Canada Climate Change Steering Committee), including CAPI, and co-chaired by John Kennelly, University of Alberta and John Oliver, Maple Leaf Bio-Concepts.

11. *Degrees of Change: Climate Warming and the Stakes for Canada*, Climate Prosperity Report 02, National Round Table on the Environment and the Economy, 2010.

12. *Adapting Agriculture to Climate Variability*: Executive Summary of meetings held in Winnipeg and Kansas City, March 2010.

13. It is noted that "Over the past 5 years, governments have made an average of \$3 billion/yr in direct agriculture payments related to droughts and poor growing seasons in the Prairies" as found in "Climate Change Impacts and Adaptation for Key Economic and Natural Environment Sectors: Integrated Assessment of Prairie Agricultural Resilience and Adaptation Options," Environment Canada: http://ess.nrcan.gc.ca/ercc-rrcc/proj1/theme2/act1_e.php#1

14. Environmental performance of major crops are measured against key indicators, such as water use, energy use, soil loss, climate impact. (*Field to Market: The Keystone Alliance for Sustainable Agriculture*, The Keystone Centre, First Report, January 2009.)

15. Ghislain J. Pelletier, Vice President Global Agriculture, McCain Foods, Interview, CAPI, 2010. (The Canadian Horticulture Council's CanadaGap scheme is a national food safety standard and certification system for fresh fruits and vegetables which also has been given recognition by the Global Food Safety Initiative (GFSI), a global food safety management system. GFSI provides a food safety benchmarking scheme, improving audit efficiency and improving costs in the supply chain.)

16. Note that this is in contrast to the objectives of GLOBALG.A.P., a private sector certification initiative designed to create one standard for "good agricultural practices" for global pre-farm gate agriculture activities, such as minimizing inputs, benchmarking and best practices sharing; it is not visible to the consumer as it is a business-to-business label.

17. *Adapting Agriculture to Climate Variability*: Executive Summary of meetings held in Winnipeg and Kansas City, March 2010.
 18. In 2001-02, a massive drought in western Canada saw agricultural production drop an estimated \$3.6 billion. Net farm income in 2002 was negative in Saskatchewan and zero in Alberta (Lessons Learned from the Canadian Drought Years 2001-02, Agriculture and Agri-Food Canada, January 2005).
 19. Future innovation may include plant development with improved nitrogen use efficiency that would reduce fertilizer requirements and GHG emissions. (Protecting Our Planet, Council for Biotechnology Information Canada.)
 20. "Clean, green and powered by cow patties," *The Globe and Mail*, February 17, 2010, profile of Bern Kotelko of Highland Feeders which operates the sixth largest cattle operation in Canada.
 21. Companies referred to are: Solanyl Biopolymers Inc. and Simplot Canada Inc.
 22. "Australia's water war: Refilling the basin," *The Economist*, December 11, 2010; A.G. Kawamura, California Secretary of Agriculture, Presentation, U.S. Farm Foundation Roundtable, Sacramento, June 12, 2009.
 23. EcoRessources Consultants and the International Institute for Sustainable Development undertook a review of ecological goods and services for CAPI in 2010. The work focused on developing a process for determining "who should pay" for implementing EGS. Its work is based on the principle that decision-making depends on multiple steps including at the local or regional level since climate, environmental and agricultural factors vary by geography. This report also noted that there is a research gap: there is no consolidated "atlas" of climate change impacts on Canadian agriculture to guide such decision-making at a regional level. *Analysis of EG&S Policy Options: Fostering Adaptation of Canadian Farmers to Climate Change and Development of a Decision-Making Tool*, EcoRessources Consultants, December 2010.
 24. A reverse auction process relies on many sellers and one buyer to recreate wetlands for example. This approach is being explored in Western Canada (Wetland Restoration Reverse Auction Pilot Project: The Assiniboine River Watershed; <http://www.apas.ca/dbdocs//49f130685a4d7.pdf>.) The EU is using cross-compliance; farms qualify for support payments after meeting environmental or rural improvement requirements. (*Policy Goals, Objectives and Instruments in Other Jurisdictions*, Harry de Gorter and Erika Kliauga, CAPI, 2010, p.12.
-

5. ENABLING REGULATORY CHANGE

Cabinet
Committee on
Food

Modernize
processes and
10-year cap on
regulations

Joint meeting of
Ministers: agri-
food, health,
environment

Link Growing
Forward and
Canada Health
Accord

Annual
progress
scorecard on
priorities

Summary

The absence of a modern and responsive regulatory environment impedes the growth, productivity, and innovative potential of Canada's agri-food sector.¹ Conversely, regulations protect the public interest, ensure food safety, quality standards, and environmental protection, and can create a level playing field in the marketplace, among other priorities.

Regulations should not have a zero-sum outcome: one priority (productivity) should not come at the expense of another (protection). A modern and responsive regulatory system accomplishes both. The regulatory process should be an integral part of a successful and safe food system; regulations should help industry succeed and ensure high standards.

This paper suggests that Canada can use regulatory processes and oversight to help make the country the most reliable and innovative supplier of safe and high-quality food. A shift in mindset and process is required. This chapter advocates the creation of a federal Cabinet Committee on Food, and describes the need for integrated policy-making among ministers in different portfolios, including agri-food, health, and the environment. As well, an annual report card on progress to update and resolve regulatory issues is required. Other ideas to improve the regulatory process are also considered.

Impact of regulations

The Department of Fisheries and Oceans (DFO) regulates fish habitat. Its regulations can prevent the cleaning of ditches along rural roads. In Manitoba's relatively flat Red River Valley, the system of shallow drains and drainage ditches are crucial to prevent or mitigate field flooding. Over time, silt and vegetation debris build up and impede the flow of water in these drainage ditches. It had been normal practice for municipalities to routinely clean these ditches, with priority given to areas of localized flooding. However, DFO regulations forbid disturbing any flow of water prior to late July in order not to disturb fish habitat. In 2010, southeastern Manitoba received an amount of rainfall well above normal. The ditches were not cleared and crops were flooded. If the municipality had been allowed to clean the ditches soon after the spring thaw, a significant amount of the flooding would have been avoided and could have reduced the crop losses farmers experienced.²

What's Not Working




Regulatory disconnects: Regulatory disconnects inhibit Canada's innovation potential.³ The inhibiting factors include: the time it takes to obtain approvals, acceptance of research/evidence and other documentary requirements for seed certification, novel traits, novel food products, health claims and minor use registrations of pest control products, and overall timeliness of regulatory decisions.⁴ In many cases, these hurdles are the result of process and administration.

One report found that the regulatory process needed to bring new food products to market (i.e., those relating to health claims, additives, novel foods, and fortifications) is not driven by health and safety considerations but by unresponsive administrative processes and decision-making frameworks.⁵ The result: the regulatory environment is preventing Canada from being seen as an attractive investment environment.⁶ (See box story: "Health claims").

The policy dilemma is that governments devote considerable resources to supporting R&D and innovation. Yet, at the same time, regulations and policies stand in the way of maximizing the benefits of those initiatives. (See table: "Regulatory disconnects.")

Policy silos: Policy-making conducted in silos contributes to such disconnects. Regulatory impact assessments are not integrated and harmonized. Genuinely important objectives held across different departments or among governments can "compete" with each other. The situation is justified by the fact that each department and level of government must adhere to specific objectives that fall under its respective domain of responsibility. This has led to the call for better integration of health and agri-food policies and their regulatory processes.⁷

Regulatory Disconnects to Healthy Food Innovation: Three Case Studies⁸

	Health Attributes	Support	Disconnects
 <p>DHA-milk</p>	<p>DHA, a long-chain fatty acid linked to brain and eye development in children.</p> <p>DHA: docosahexaenoic acid.</p>	<p>Novel food designation: patented process to elevate DHA levels – the first product to achieve this designation under Health Canada regulations.</p> <p>Government funding: federal, provincial, university-funded, with industry support.</p>	<p>Labelling: regulations require DHA to be reported in grams but DHA is a micro-nutrient.</p> <p>Novel food approval: costly, lengthy process delays technology.</p> <p>Supply management: while organized production helped create the DHA milk value chain, dairy supply restrictions can inhibit innovation.</p>
 <p>Pulses</p>	<p>Cardiovascular benefits; weight management; (gluten-free/high fibre) improving insulin resistance (diabetes); gut health.</p>	<p>Reformulations: new uses of pulse crops as proprietary food ingredients.</p> <p>Government funding: federal and two provinces funding support for novel varieties/breeding. Several clinical trials with university researchers to show health benefits. Funding also supports market development.</p> <p>Value chain support: pulse industry supports trials; grower check-off program for research.</p>	<p>Regulation: approvals of novel ingredients and reformulated food products are lengthy and costly. Process for health claims is non-transparent.</p>
 <p>Wild blueberries</p>	<p>Antioxidant; weight control/diabetes prevention; vision benefits.</p>	<p>Government funding: federal and two provinces funding support for health research.</p> <p>Value chain support: company and grower association contributions to fund research chairs at an agricultural college. Producer/processor levy for product promotion, marketing. Annual North American conference to connect researchers and the industry.</p>	<p>Regulation: different requirements for use of control agents for pest control.</p> <p>Trade: value-added products face tariffs.</p> <p>Inter-provincial barriers: moving berries, equipment, and bee colonies (for pollination) can be problematic.</p> <p>SR&ED tax credit: food companies have difficulties getting applications approved.</p>

Note: This list is not intended to show “solutions.”

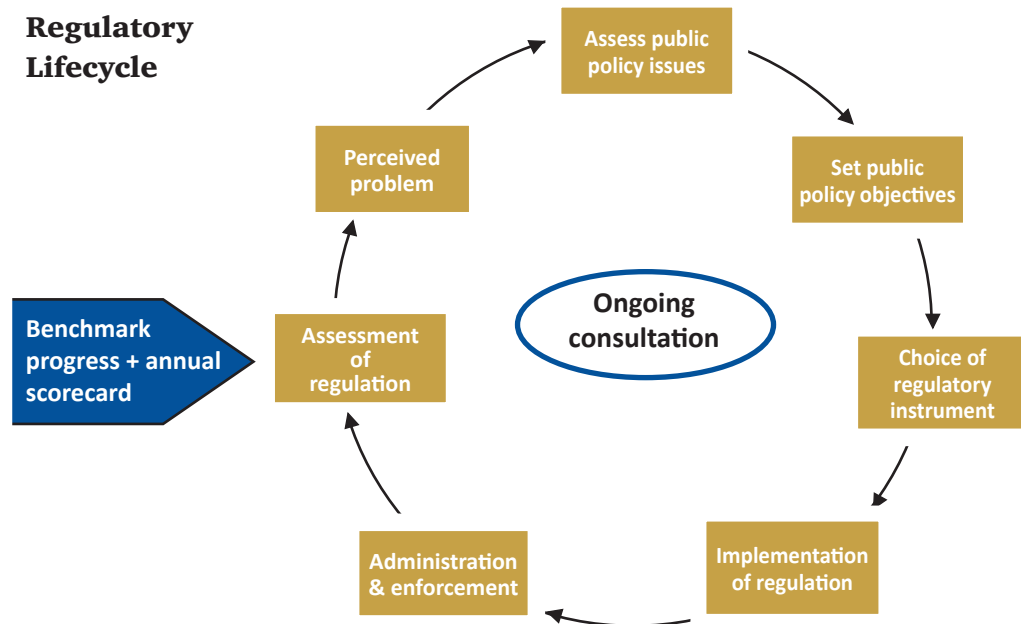
Anecdotal evidence abounds when the issue of regulations is raised among value chain operators. The work of the CAPI Leadership Panels in 2010 revealed many regulatory hindrances to produce, process, and bring foods to market. (See box story: “Impact of regulations”). One recurring concern is that food imports are thought to be treated differently (less onerously) than domestically produced foods.

Where Canada is going

There are countless examples of regulations ensuring consumer safety and quality and contributing to Canada’s good food reputation.⁹ As well, many initiatives have been undertaken to reduce red tape¹⁰ and reform regulatory processes across Canada, including introducing regulation reduction targets.¹¹ Governments are devoting considerable efforts to modernizing the regulatory framework.¹²

Change is occurring, but for many in industry not fast enough. Steps have been taken to improve the effectiveness and efficiency of new foods approvals (see box story: “Health claims”), suggesting that there are ways to transcend the traditional “silos.”¹³ There are specific examples of where a streamlined process has worked, such as in facilitating registrations and certifications in the soybean industry.¹⁴

Notwithstanding some positive steps, the question is whether Canada’s evolving process is the optimum one: is it enabling Canada to be a regulatory leader in an ever-changing operating environment?



Health claims approvals

Health claims are an important way of signaling to consumers the health and well-being attributes of certain food products. A health claim provides legitimacy for a food/ingredient-health relationship. Claims are catalysts, creating innovative products and filling market opportunities. As well, it is a consumer protection issue as consumers, industry and regulators have more knowledge on the health attributes of certain foods and what can be declared about these foods.

Unfortunately, the regulatory process for health claims has not been working well, its slowness being a major criticism. The system had approved only five claims until recently, which is a smaller set than in the US at 16 claims (although Canada's claims incorporated nine of these 16 claims and rejected one). From an industry standpoint, the lengthy approval process discourages innovation and creates an uneven regulatory environment with the US in terms of developing functional foods with more approved claims.

Despite these valid criticisms, some progress is being made on the health claims regulatory front. A regulatory modernization strategy was initiated by Health Canada in 2009 and additional claims regarding cholesterol-lowering effects of oats and plant sterols were approved in 2010. Progress was made on classifying products with a health claim as food and not as a drug, eliminating the need for a regulatory change for each health claim. Progress has been made in reviewing more potential claims and clearing up the backlog, with the current aim of having a six to nine month turnaround time. A collaborative approach between AAFC and Health Canada has facilitated progress, as part of a regulatory action plan. AAFC has also made an active effort to build industry capacity to conduct necessary scientific reviews in support of a health claim.¹⁵

Overall, a clearer regulatory pathway is being established. Some issues and challenges remain, such as systematic review methodologies, validated biomarkers, and standardization of good methodology for clinical trials to support claims substantiation, etc. Arguably, these issues are largely about the scientific evidence and necessary capacity to conduct reviews in a timely fashion, not the regulatory process. Still, further investments and research will be required to maintain the momentum.

What's Needed

The regulatory process must become better integrated and responsive. In 2009, CAPI released a study on *Regulatory Reform in Canada's Agri-Food Sector*.¹⁶ It focused on the process required for an optimal and flexible regulatory framework, with stakeholder consultation being an important part of the regulatory process.¹⁷ As well, the OECD has offered high-level guidance to countries to improve regulatory approaches. (See box story: "OECD's approach.")

Key elements of a new proposed approach emphasize having the right process in place:

Principles: In 2007, important principles for good regulatory practices were identified by a Cabinet Directive (see box story: “Canada’s approach”). But a responsive regulatory framework must include integrated and effective decision-making processes across government. This is critical in the agri-food sector where there are many layers of regulatory interests affecting performance and outcomes in the sector. The right framework can help facilitate decision-making when there are multiple (competing) objectives at issue.

Oversight: A modern regulatory framework requires oversight. This can help minimize the frustration of regulations working at cross-purposes and across jurisdictions and areas of departmental responsibility. A new Cabinet Committee on Food could take responsibility for this oversight role.

Review: Assessment of regulatory effectiveness needs change.¹⁸ Given the need to have a modern regulatory process, some form of sun-setting should be considered for regulations, such as a 10-year expiry date to institutionalize the review, revision, or termination of regulations. However, this suggestion must not create unnecessary administrative burdens or create a “floor” for unworkable regulations that end up stifling innovation. The regulatory process must remain relevant and efficient.

Consultation over the “life cycle”: Regulations should be thought of as having a life cycle (One view of a regulatory life cycle is offered on page 82.¹⁹) This report emphasizes the need for instituting assessment (cost-benefit analyses) and performance benchmarks. The regulatory process needs to be as efficient as possible in ensuring that consultation occurs over the course of that cycle: from the initial assessment for a regulation to how it is working and then to how it needs to evolve.²⁰ There are mechanisms to receive feedback from value chain stakeholders now on how regulations are working (i.e., value chain roundtables). This report’s proposed Food System Smart Innovation Centres and the Centre of Good Food Citizenship could provide effective channels for feedback. Consideration should also be given to mediating outstanding regulatory concerns.²¹

Benchmark performance: An important part of an effective regulatory process is to benchmark Canada’s regulatory efficiency and to publicly report on progress to address regulatory issues. (In doing so, key questions need to be addressed, including: does the regulation help firms to be market responsive; is it leading to federal-provincial harmonization; is it making progress against key competitors; is it appropriately protecting the consumer?)

OECD's approach: The Organisation for Economic Cooperation and Development (OECD) has created, with input from countries such as Canada, an “ideal” regulatory framework. It encourages a “whole of government” view. The approach should link policies, actions, and regulations, and should be driven at the highest political level. Such direction will ensure that coordination occurs among regulators, that regulations are coordinated, consistent and congruent, and that regulatory quality is encouraged.

Canada's approach: In 2007, the federal government published a “Cabinet Directive on Streamlining Regulation.” The directive instructs federal departments to evaluate current regulations to ensure that policy objectives are met. It describes the attributes of an ideal “regulatory policy framework.” In concert with the new directive, the federal government has developed a regulatory policy framework to help federal departments implement regulatory principles.²²

In short, Canada's regulatory process must act as an enabler. Given Canada's dependence on exports, its regulations cannot create competitive disadvantages with major trading partners. Canada can be a regulatory leader in innovation, competitiveness, sustainability, and consumer protection. Being a leader means having a simplified and modern legislative and regulatory foundation, one that is integrated across government. Coordination must come from the top. As noted above, Canada might benefit from a new Cabinet Committee on Food, in part to help ensure convergence of these important multiple policy (and regulatory) objectives.²³

This report is not about resolving current individual regulatory issues. It is focused on the regulatory process that Canada needs for a future (if not a current) agri-food world. Consider these examples:

- ▶ Functional foods and nutraceuticals are growing markets because of consumer demand.²⁴ Given the healthcare challenges facing this country, Canada needs a regulatory process that speeds healthy food innovation while protecting consumers.
 - ▶ A changing climate has potentially profound impacts on the production of food. A global warming trend can mean the threat of invasive species and the need for new crop varieties to cope with changes in moisture levels. Adaptation is critical. A responsive regulatory environment needs to be in place to bring new technologies to the market and ensure a credible and safe regulatory process.
-

- An adaptive regulatory process is also needed to cope with the reality of the private sector setting tighter performance criteria, such as for improving sustainable agriculture, water, and carbon management. Canada’s regulatory response in this case could help the agriculture sector comply with such rapidly emerging and pervasive standards. (See the chapter on Sustainability for more details.)

As food systems become more integrated, policy and regulation-making needs to do so as well. Cross-ministry collaboration and policy coordination is needed to support marketplace and societal change.

In addition to the ideas presented in this chapter, the preceding chapters profiled the importance of supportive regulatory practices:

Centre for Good Food Citizenship: Regulatory frameworks support good food objectives; regulatory impediments can inhibit the development of novel foods (a matter addressed in this chapter); self-regulatory initiatives with support from government, such as improving product labelling and addressing unhealthy food ingredients, are also viable pathways to change.

Food System Smart Innovation Centres: Resolving regulatory disconnects is necessary to facilitate innovation and ensure an effective return from public investment in R&D. The proposed innovation centres would include an embedded regulatory champion to help navigate the regulatory process and support product development.

Risk Management across Food Systems: “Regulatory risk” is one of many forms of risk facing the agri-food sector that can undermine the performance of firms. Governments need to address regulatory issues faced by each food system. Regulations can also be proactive, including performance-driven criteria to encourage the adoption of beneficial management practices.

Leadership in Sustainability: Responsive regulatory policies and programs can position the agri-food sector as a leader in sustainability practices, improve compliance with emerging global retail sustainability standards, more adeptly respond to climate challenges, and help producers derive greater on-farm efficiencies.

Goals and Targets to Move Forward

In the regulatory area, the goal is a responsive, modern regulatory system. Associated targets and suggested timing are noted in the following table.

Goal: Responsive and modern regulatory system

Targets

- | | |
|--------------------------------------|----------------------|
| 1. Annual regulatory report card | 1. Implement by 2014 |
| 2. Federal Cabinet Committee on Food | 2. 2012 |

Concept

Regulations can facilitate or hinder meeting societal and competitiveness priorities. Having the optimum regulatory environment is critical to position Canada for a changing world.

Elements

Regulatory efficiency scorecard: Objectives need to be transparent and progress needs to be benchmarked. Implementing report cards has become a government priority.²⁵ Based on ideas developed in this chapter, a report card is needed on regulations to ensure they enable innovation, competitiveness, productivity, and consumer protection (food safety, inspection and environmental protection). Regulations also need to be tracked. A 10-year cap on regulations should be considered to ensure relevance of rules in an ever-changing world (but not if it “shields” unworkable regulations from change for 10 years).

Integrating agri-food policy with relevant policies from other departments, starting with a federal Cabinet Committee on Food and regular joint meetings of ministers: Ministers of agriculture and health can set the tone by taking a more integrated approach. Food is a health issue, and food is a competitiveness issue. But diet links them both. Rising disease rates and healthcare costs mean diet and food choices play key roles in health and wellness. The food industry is a vital partner in providing healthy choices and provides an interface with the consumer. In this spirit, the Growing Forward policy framework (expiring in 2013) and the Canada Health Accord (expiring in 2014) should be renewed and linked. A joint meeting of ministers of agriculture and the environment is also warranted as food issues, environmental sustainability, and climate change concerns converge. Other ministries need to be engaged, particularly those overseeing international trade, industry, transportation, population health, and biotechnology. A federal Cabinet Committee on Food should lead and coordinate these efforts. This approach reflects the whole-of-government philosophy needed to effectively manage complex cross-cutting issues. Stakeholders need to advocate for such an approach.

Endnotes

1. *Building Convergence: Toward an Integrated Health & Agri-Food Strategy for Canada*, CAPI, 2009, p. 49. The following report lists recent regulatory improvement initiatives: *Food Regulatory Systems: Canada's performance in the global marketplace, a case study approach*, Prepared for the Food & Consumer Products of Canada by the George Morris Centre, 2008, p. 4.
 2. Based on CAPI Leadership Panel on Sustainability discussions; see also Keystone Agricultural Producers, Policy Synopsis: Land and Resource Use http://www.kap.mb.ca/policy_landresource.htm
 3. The idea that regulations present “disconnects” was profiled in the report: *Smart Regulation: A Regulatory Strategy for Canada*, Report to the Government of Canada, the External Advisory Committee on Smart Regulation, September 2004.
 4. *Advancing Canada's Food and Health Agenda: Case Studies in Healthy Foods*, Richard Ivey School of Business, CAPI, 2010, pp, 34, 53.
 5. *Food Regulatory Systems: Canada's performance in the global marketplace, a case study approach*, 2008, p. 4.
 6. Anne Kennedy, Assistant Director of Food Regulatory Issues Division, Agriculture and Agri-Food Canada, Presentation to Food & Health: Advancing the Policy Agenda Workshop, held by the Richard Ivey School of Business, March 2010.
 7. *Building Convergence: Toward an Integrated Health & Agri-Food Strategy for Canada*, CAPI, 2009, p. 12; *Finding Common Ground*, CAPI, 2007, p. 33.
 8. Adapted from *Advancing Canada's Food and Health Agenda: Case Studies in Healthy Foods*, Richard Ivey School of Business, CAPI, 2010; this study also looked at soybeans.
 9. Beef and hog grading standards have reduced the fat and increased the lean content of carcasses (*Finding Common Ground*, CAPI, 2007, p. 44); regulations and standards reassure buyers. Three quarters of Canadian soybean exports to Asia are classified as “identity preserved” under the Canadian Identity Preserved Recognition System with Canadian Grain Commission oversight (governed by the Canada Grain Act). This system provides confidence to foreign customers about the quality of soy product and that it has not been contaminated during distribution (*Regulations helping Canadian Agri-food Competitiveness: Summary Report*, Toma & Bouma Management Consultants, CAPI, 2010, p. 8); and, more than 100 foods from plants with novel traits, or genetically modified products, have been approved in Canada since the mid-1990s (*Biotech basics – a guide to plant biotechnology in Canada*, Council for Biotechnology Information Canada.)
-

10. One report indicated that there are over 280 federal regulations that impact on some aspect of the agri-food sector. (*Regulatory Reform in Canada's Agri-Food Sector*, CAPI, 2009, p. 27.) See also: *Smart Regulation: A Regulatory Strategy for Canada*, Report to the Government of Canada, the External Advisory Committee on Smart Regulation, September 2004.
 11. British Columbia had a target of reducing regulatory requirements by 33% from 2001 to 2004 (which has been exceeded). (*Regulatory Reform in Canada's Agri-Food Sector*, 2009, p. 24; see also B.C.'s Ministry of Small Business, Technology and Economic Development's website for a progress report on regulation reductions.)
 12. See, for example: Health Canada's Action Plan in Response to Stakeholder Feedback from Consultations on Modernizing Canada's Framework for Health Claims on Food, http://www.hc-sc.gc.ca/fn-an/pubs/label-etiquet/_claims-reclam/2009-plan-action-plan/index-eng.php
 13. Agriculture and Agri-Food Canada has created a cross-ministerial collaboration with Health Canada to help facilitate the progress of health claims for the agri-food sector. (Anne Kennedy, Assistant Director of Food Regulatory Issues Division, Agriculture and Agri-Food Canada, Presentation to the Food and Rural Affairs at the Food & Health Advancing the Policy Agenda Workshop held by the Richard Ivey School of Business, March 2010).
 14. *Advancing Canada's Food and Health Agenda: Case Studies in Healthy Foods*, Richard Ivey School of Business, CAPI, 2010, pp. 34-35.
 15. *Regulating Health Claims in Canada – Current Status*, Christina Wong and Mary L'Abbé, Department of Nutritional Sciences, University of Toronto, CAPI, 2010.
 16. *Regulatory Reform in Canada's Agri-Food Sector: A Canadian Agri-Food Policy Institute Discussion Paper*, March 2009, p. 3. In preparing this paper, CAPI held consultations with Treasury Board officials and representatives of regulatory agencies in the agri-food sector.
 17. The CAPI Discussion Paper (p. 32) identified the following improvements: Developing over-arching objectives for regulation; encouraging greater collaboration between departments and agencies; seeking industry input on the choice and design of regulatory instruments; giving greater consideration to non-prescriptive types of regulations; allocating sufficient resources for an effective infrastructure to support the regulatory process; harmonizing regulations with major trading partners and between provinces; designing legislation that provides for more regulatory flexibility; conducting a comprehensive examination that evaluates regulations using agreed upon principles; doing ex-post evaluation of regulations; and making a commitment to implement required changes.
-

18. These ideas were also highlighted in *Regulatory Reform in Canada's Agri-Food Sector*, CAPI, 2009, p. 34.
 19. Health Canada presents a life cycle approach to regulate health products. (Health Products and Food Branch Strategic Plan, 2007-2012, Health Canada.)
 20. This point is reinforced by the need for taking a “whole-of-government” approach to policy making as outlined in *Building Convergence: Toward an Integrated Agri-Food and Health Strategy for Canada*, CAPI, 2009.
 21. Efforts to improve regulations within individual food systems can be addressed in dedicated “blue ribbon panels” which bring together decision-makers in industry and regulatory agencies. This idea was presented in the report *Regulatory Reform in Canada's Agri-Food Sector*, CAPI, 2009, p. 5. This idea could also become a best practice model for identifying and assessing issues – a concept advanced by the Cabinet Directive of Streamlining Regulation, 2007, p. 4.
 22. *Regulatory Reform in Canada's Agri-Food Sector: A Canadian Agri-Food Policy Institute Discussion Paper*, March 2009, p. 13.
 23. There are different approaches to enact change. Although going well beyond regulatory change, the U.K. embarked upon a national food policy framework in 2007 based on the Prime Minister's instruction to examine that country's food policy across government (*Food 2030*).
 24. *Food Regulatory Systems: Canada's performance in the global marketplace, a case study approach*, CAPI, 2008, p. 7.
 25. For example, the Federal Sustainable Development Strategy reports on environmental decision-making goals, targets and implementation strategies. It provides an integrated, whole-of-government picture of actions and results to achieve environmental sustainability, including using SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) criteria to establish the targets. (*Planning for a Sustainable Future: A Federal Sustainable Development Strategy for Canada*, October 2010, Environment Canada.)
-

CONCLUSION: ACHIEVING THE DESTINATION

The Destination's Overarching Targets: "75 by 25"

By 2025:

1. **Exports:** Doubling the dollar value of Canadian agri-food exports to \$75 billion, up from \$38.8 billion.
2. **Domestic consumption:** Produce and supply 75% of our own food, up from 68%.
3. **Bio-materials/fuels:** Generate revenue and efficiency by relying on biomaterials and biofuels in 75% of the agri-food sector.

Opportunities

Canada's agri-food sector has tremendous opportunity. Each food system knows what is holding it back and what it will take to change. Government has a role. Industry has a role.

Canada is already doing many things well. The sector has made great efforts to open up new markets, promote Canadian food products, and apply new technologies and innovation. But the agri-food sector is also struggling. This discussion paper puts forward a case for accelerating change, resolving persistent issues, and creating the conditions necessary to meet Canada's potential. It emphasizes a more collaborative approach in each food system.

Strategic targets are being used by organizations and governments to seize attention and galvanize action, as noted in the Introduction. The proposed targets (noted above¹) provide a common focal point for broad-based food systems. Inspired by the discussions and guidance of CAPI's partners, the targets are designed to elicit a dialogue on what is possible. Leadership is required by industry and government to embrace the need for a long-term plan and associated targets to achieve it. It is CAPI's view that each food system would need to define their action plan to get there. This paper offers the conditions to facilitate their success (i.e., a shift in how we collaborate, innovate, manage risks, achieve sustainability, and regulate). While the actual targets could be refined, CAPI believes that a destination and the need for targets is essential to truly drive strategic change. This has been done before. In the early 1990s, the country set a goal of doubling agricultural exports, from about \$10 billion to \$20 billion by the year 2000.²

Municipal food system strategies

Toronto and Vancouver have joined New York, London and other major cities in using food policies to address a range of issues from sustainability to healthy food choices.

Toronto is taking a whole-of-government approach. Every city department has been assigned responsibility to collaborate with the initiative. They are looking at the entire food system, from “production, processing, distribution, retail, preparation, consumption and disposal.” Breaking down government silos is a major part of this overhaul, which seeks to “embed food system thinking in city government.”

The approach includes a local food procurement policy, which aims to source 50% of food for city facilities and operations locally (i.e., from Ontario). But there have been some challenges. During the winter of 2009, procuring lettuce became problematic when the only available product was greenhouse-grown and packaged in polystyrene clamshells, which are not compatible with the city’s recycling program. Toronto has also found it difficult to find locally canned and frozen foods. The city is working with local producers and processors to achieve their procurement goal.

Food product labels pose another challenge, as they do not always disclose the manufacturing location, causing difficulties in determining the source of many items.

Local governments are changing the way they connect to food systems so that food is an enabler of urban economic, social and health objectives. Given that some 80% of Canadians live in cities, the entire value chain needs to understand how urban food strategies can create new opportunities.³

The need for a plan

A national agri-food plan is needed.

Good food plans are being put in place – see sidebars on municipal and university strategies. These “grassroot” initiatives are revealing. These entities, and others, are connecting the dots. They are linking society, the economy, food, and health.⁴ Stakeholders are developing ideas for a *national food strategy*, *2020 food visions*, and for defining comprehensive new research in the sector to support a more competitive future. The signals are strong. A new approach is needed.

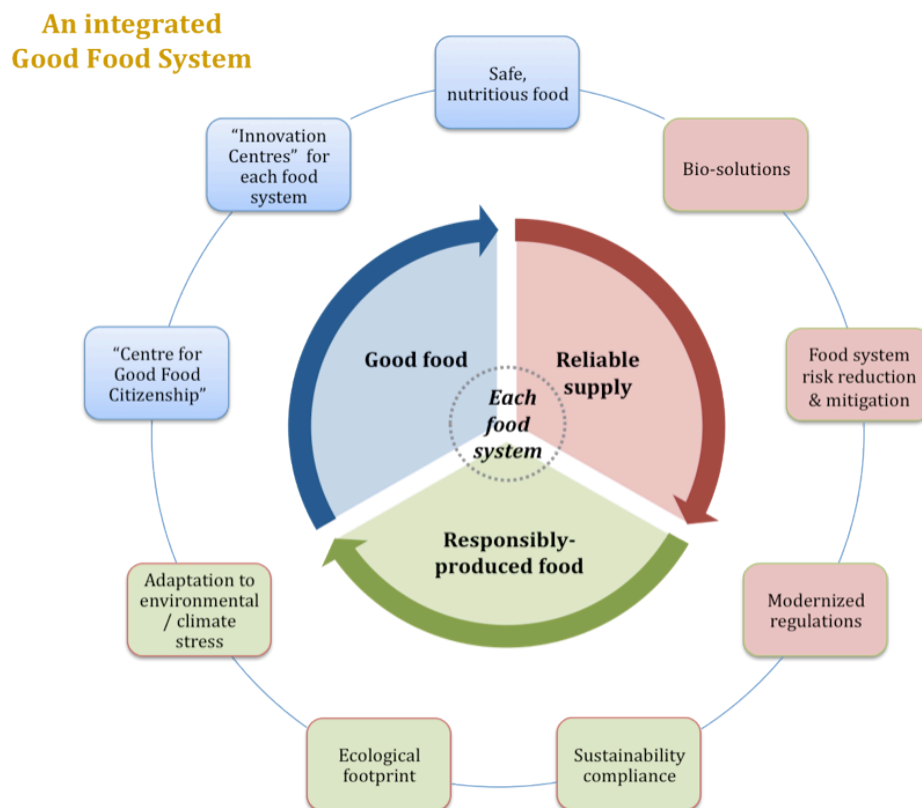
A compelling objective is a shift in mindset, replacing restrictive short-term thinking with a long-term horizon. This report emphasizes the need to aim for the best food systems on the planet, with specific targets to focus the effort and seize opportunities – the proposed “75 by 25” destination.

Time is short. The sector faces policy “windows of opportunity.” Competitors are not pausing in their efforts to define winning strategies. Budget deficits are forecast for the foreseeable future, limiting government’s capacity to repond. Canada’s agricultural policy framework (Growing Forward) expires in 2013; concerted steps need to be taken soon to prepare for long-term change. The Canada Health Accord expires in 2014. This also presents an opportunity to link certain priorities in agri-food and health, given that healthy choices, diet, and food connect the two domains.⁵

Good Food Systems

Food systems need to be working at their best, incorporating meaningful collaborations, systematic innovation, and supportive policies and regulations. Each system needs to focus on how it will provide good food, responsibly produced food, and reliably supplied food. The new initiatives, policies, and programs outlined in this paper will facilitate this process. Canada needs to move from linear thinking to a systems view, as reflected in the following diagram, “an integrated good food system.”

Food systems. This is how we see reaching the destination and targets so that Canada’s agri-food sector can be more viable, competitive and profitable.



Who needs to do what

CAPI's role is to be an independent catalyst for dialogue and new ideas. It will start developing the core ideas of this report with the help of those who have participated in the consultative process and others. As well, CAPI will explore the merits of holding a regular event to assess the progress of strategic change in Canada and evaluate Canada's relative agri-food position on the world market. Positioning the country for the future requires shared leadership. Everyone has a role to play.

Agri-Food Sector: Come together to plan a long-term strategy. Embrace systems thinking. Pursue genuine collaborations as a strategic priority. Increase innovation funding partnerships with public sector researchers. Seek out best practices to meet future consumer/customer needs.

Prime Minister, Premiers & Mayors: Declare a bold agri-food destination so that Canada can enhance its quality of life and prosperity. Establish the objectives to position Canada and communities for success. Coordinate across jurisdictions. Ensure policy priorities are linked. Be the ambassadors to open up new markets for Canadian foods.

Ministers & all elected to office: Support the conditions for launching an integrated strategy for food, health, and the environment. Link to other sectors, such as transportation and trade. Define specific success measures. Ensure regulatory priorities do not conflict.

Governments & Regulators: Implement best practices for program design, delivery and assessment. Embed staff with stakeholders to learn and contribute to new ideas (and vice versa). Deepen inter-departmental coordination – with benchmarks to mark progress.

Academics/Researchers: Frame solutions. Look to commercialize research to help resolve the challenges facing the sector. Partner with other researchers in non-agri-food sectors to generate new ideas. Focus basic research on national strategic priorities. Publish beyond academic journals.

Adjacent Sectors (transport, health, environment, trade, etc): Make the connection to an integrated food strategy relevant to the sector. Be catalysts for change by bringing different sectors and groups together to anticipate the issues and create opportunities, including with the agri-food sector. Address common regulatory issues as a win-win.

Consumers: Learn about good food choices, nutritional foods and food labels. Enjoy Canadian-produced and supplied foods. Minimize packaging and food waste. Eat a balanced diet. Be well-informed about healthy, sustainable food policies and practices.

Media: Link the important issues to prompt change (“healthcare via a garden, market or grocery cart”). Profile the agri-food innovators and the success stories to build awareness of what Canadians are doing. Engage Canadians to be well-informed on agri-food issues.

University food strategies

Dalhousie University is developing a food and sustainability plan. It wants to work with the regional agri-food industry and its two food distributors to meet its campus food needs.

Its approach includes a sustainable food purchasing policy, such as for sustainable sea-food and local food-sourcing. It is examining cage-free egg supplies, rooftop gardens and pasture-raised/grass-fed beef. It also is looking to university research capacity to create innovative food-related initiatives. It has developed a discussion paper acknowledging the challenges of defining “sustainable purchasing” and identifying “local-sourced” foods, and it notes the lack of producer/supplier food networks in the region.

The report explores other university approaches. McGill University’s sustainable food purchasing policy (a 500 km radius) has local food targets defined by the season (i.e., 50% local food purchases in the fall). McGill, Concordia and the University of British Columbia also support food research partnerships.

Universities are using their purchasing power to create new food systems.⁶

Canada’s agri-food sector is vast; many interested parties both within the sector and outside of it take interest in its progress. For this discussion paper, many topics were not addressed or may have received only some treatment in the research conducted for it. Many conversations occurred in CAPI’s dialogues within its three Leadership Panels, its Advisory Committee and in other stakeholder consultations, but not every subject could be covered in this work. Topics relating to Canada’s marketing programs, the Canadian Wheat Board and supply management, the World Trade Organization negotiations, genetically-modified organisms, access to food among low-income earners, a variety of consumer-food issues, transport issues, among many other important topics may have been raised but not fully examined. This is not because these or other issues are not relevant or important but there were limitations of time and scope to devote to every item of interest to this broad and complex sector. Moreover, many stakeholders were not part of CAPI’s initial consultative process. But now it is time to reach out and seek the views of interested stakeholder and observers. Moving forward, we hope to benefit from such views as we strive to help create a more profitable and competitive agri-food sector, one that contributes to creating a healthier population and healthier ecosystems in Canada.

Endnotes

1. This measure of Canada's food supply share of the food eaten by Canadians is based on taking the value of Canadian manufactured food production adjusted for exports, which is then divided by the estimated value of shipments to food service and retail distributors (based on imports plus food production minus food exports) using Statistics Canada data. (Value of food shipments: Statistics Canada Catalogue No. 11-621-M, no 87.) The comparable value was 71% in 2004 and 70% in 2005.
 2. *Canadian Governments' Policy Goals, Objectives and Instruments for the Agri-Food Sector*, Grace Skogstad, University of Toronto, p. 5. The 1995 federal budget documentation referenced that "Canadian producers and processors ... have set a goal of at least \$20 billion in exports by the year 2000." The context was that "GATT and NAFTA are expected to significantly increase world agri-food trade opportunities." Rapid growth is possible. For instance, Canada saw its exports to China increase nearly 300% in the seven years between 1995 and 2002. The rise was attributable to the growth in the middle class in this country (a phenomenon occurring elsewhere, too) and their demand for more value-added Canadian food products, such as meat, bakery and dairy products. (Canadian Exports and Imports: Industry Profile (Canada's Food Processing Industry), 15-515XWE, Statistics Canada.)
 3. *Draft Regional Food System Strategy, Metro Vancouver, September 2010*; Brian Cook, Research Consultant, Toronto Public Health; *Food Connections: Toward a Healthy and Sustainable Food System for Toronto*, February 2010, pp. 4, 24; Toronto Government Management Committee, Decision Document, November 9, 2009, GM26.19; Toronto Government Management Committee, Local Food Procurement Policy Update, June 8, 2009, p. 5.
 4. *Food Connections: Toward a Healthy and Sustainable Food System for Toronto*, Toronto Public Health, 2010.
 5. The need to promote healthy foods, improve consumer good food choices and better diets is common to both the health and agri-food domain. Better coordination, for example, can spur more coordinated research and promotion of the Canadian healthy brand/diet.
 6. *Food Services and the Dalhousie Community: sustainability, situation analysis and policy recommendation*, College of Sustainability, Dalhousie University, December 2010.
-

APPENDIX

CAPI

CAPI Board of Directors

Gaëtan Lussier, Chair

Owen McAuley, Vice-Chair; Primary producer

Bob Church, Primary producer; professor emeritus Medicine

Rory Francis, Executive Director, PEI BioAlliance

Art Froehlich, Primary producer; Senior Partner, AdFarm

Peter Hannam, Grain and seed producer, and President, Woodrill Ltd.

Bob Jamieson, Primary producer; President, BioQuest International Consulting

Margaret Rempel, Primary producer

Michel R. Saint-Pierre, Ancien sous-ministre, Ministère de l'Agriculture, des Pêcheries
et de l'Alimentation du Québec

Wayne Stark, Founder & CEO, Pursuit Development Labs Inc.

Doug Stewart, Former Vice-Chairperson & CEO, Sobeys Inc.

Advisory Committee

Harvey Anderson, Professor, Nutritional Sciences, Faculty of Medicine,
University of Toronto

Ted Bilyea, President, Ted Bilyea and Associates

Ron Bonnett, President, Canadian Federation of Agriculture

Peter Brenders, President & CEO, BIOTEC Canada

Nancy Croitoru, President & CEO, Food & Consumer Products of Canada

Mel Fruitman, President, Fruitman Consulting Group

Nick Jennery, President & CEO, Canadian Council of Grocery Distributors

John Knubley, Deputy Minister, Agriculture and Agri-Food Canada (ex-officio)

Christian Lacasse, President, L'Union des producteurs agricoles

Jean-Paul Laforest, Dean, Faculty of Agriculture and Food Services, Laval University

John Messer, Past President, Ducks Unlimited Canada

John Oliver, President, Maple Leaf Bio-Concepts

Maria Smith, President, PEI Young Farmers

Leadership Panel on Food & Wellness Connection

Wayne Stark (Chair), see Board of Directors
Ron Bonnett, see Advisory Committee
JoAnne Buth, President, Canola Council of Canada
Jim Brandle, CEO, Vineland Research and Innovation Centre
Nancy Croitoru, see Advisory Committee
Philip Donne, President, Campbell Company of Canada
Kim Elmslie, Director General, Public Health Agency of Canada
Jo-Ann Hall, Director, Alberta Agriculture & Rural Development
Lynn Hammell, Conseillère en planification, Ministère de l'Agriculture,
des Pêcheries et de l'Alimentation du Québec
Hasan Hutchinson, Director General, Nutrition Policy and Promotion, Health Canada
David Jenkins, Professor, Departments of Nutritional Sciences and Medicine,
University of Toronto
Nick Jennery, see Advisory Committee
Marilyn Knox, President, Nestlé Nutrition Canada
Gaëtan Lussier, see Board of Directors
Leslie MacLaren, Co-President & Vice-President Academic,
Nova Scotia Agricultural College
John F. T. Scott, President & CEO, Canadian Federation of Independent Grocers
Marsha Sharp, CEO, Dietitians of Canada

Leadership Panel on Sustainability

Art Froehlich (Co-Chair), see Board of Directors
Dave Rudolph (Co-Chair), Professor, Earth and Environmental Services,
University of Waterloo
Lauren Baker, Director, Sustain Ontario
Ted Bilyea, see Advisory Committee
Paula Brand, Director, Integrated Decision Making Division, Environment Canada
Bryan Gilvesy, Owner, President & CEO, Y U Ranch
Gisèle Grandbois, President & CEO, Research and Development Institute
for the Agri-Environment
John Messer, see Advisory Committee
John Oliver, see Advisory Committee
Andrew Raphael, Partner, Director Agri-Food, Meyers Norris Penny LLP
Margaret Rempel, see Board of Directors
Rob Rennie, President & CEO, Spur Ventures
David Runnalls, Distinguished Fellow and former President,
International Institute for Sustainable Development

Leadership Panel on Viability

Glen Findlay (Co-Chair), primary producer; former Manitoba Minister of Agriculture

Michel R. Saint-Pierre (Co-Chair), see Board of Directors

Richard Barichello, Professor, Land & Food Systems, University of British Columbia

Bob Friesen, CEO, North America Strategic Agriculture Institute;

Farmers of North America

Alan Grant, Executive Director, Agriculture Services Branch,

Department of Agriculture, Nova Scotia

Jacques Laforge, President, Dairy Farmers of Canada

Rory McAlpine, Vice President, Government & Industry Relations,

Maple Leaf Foods Inc.

Gwen Paddock, National Manager, Agriculture & Agribusiness, Royal Bank of Canada

Martin Rice, Executive Director, Canadian Pork Council

Charles-Felix Ross, Deputy General Manager,

L'Union des producteurs agricoles du Québec

Gerry Van Winden, President, Veg Pro International Inc.

CAPI Members

Dave Antle, Assistant Deputy Minister, Policy Division,

Ontario Ministry of Agriculture, Food and Rural Affairs

Marc Dion, Sous-ministre, ministère de l'Agriculture,

des Pêcheries et de l'Alimentation du Québec

Brenda Frank, Senior Director, Farm Credit Canada

Colin Jeffares, Assistant Deputy Minister, Policy and Environment Sector,

Alberta Agriculture and Rural Development

Partners

Gordon Bacon, CEO, Pulse Canada

Janet Beauvais, Professor of Practice,

McGill World Platform for Health and Economic Convergence, McGill University

Dave Sparling, Professor, Chair of Agri-Food Innovation and Regulation,

Richard Ivey School of Business, University of Western Ontario

Tony Szumigalski, Policy Analyst, Manitoba Agriculture, Food & Rural Initiatives

Note: Participants at the CAPI Convergence Meeting, November 2-3, 2010, (which considered the ideas developed by the leadership panels) included most people listed above, as well as:

Garnet Etsell, 2nd Vice-President, Canadian Federation of Agriculture
John Groenewegen, JRG Consulting Group
Sue Lang, AdFarm
Pamela Laughland, Research Associate, Richard Ivey School of Business,
University of Western Ontario
Melanie Leech, Director General, Food and Drink Federation (U.K.)
Kim McConnell, AdFarm
Greg Meredith, Assistant Deputy Minister, Strategic Policy Branch,
Agriculture and Agri-Food Canada
Alan Parkinson, Acting Director General, Agri-Environmental Adaptation and Practice,
Agriculture and Agri-Food Canada
Paul Rovey, Rovey Dairy; Chairman, Dairy Management Inc. (U.S.)

Other Contributors

Garth Coffin
Mario Dumais
George Fleischmann
Douglas Hedley, Executive Director,
Canadian Faculties of Agriculture and Veterinary Medicine
David Hope, Senior Fellow of Agricultural Policy, University of Guelph
Ken Knox

CAPI staff

Rebecca Bowie, Administrative Assistant
Kim Kelly, Interim Executive Assistant
David McInnes, President and Chief Executive Officer
Emily Watt, Coordinator, Corporate Services
Daniel Yeon, Vice-President, Operations

CAPI welcomes your feedback on this discussion paper. In May 2011, CAPI expects to prepare an update after considering the feedback and conducting further work.



Canadian Agri-Food Policy Institute (CAPI)

960 Carling Avenue, CEF

Building 49, Room 318

Ottawa, ON K1A 0C6

T: 613-232-8008 or toll-free 1-866-534-7593

F: 613-232-3838

info@capi-icpa.ca

www.capi-icpa.ca
