

Canadian Policy Instruments in Sustainable and Organic Agriculture

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This discussion paper was developed as a part of a community-academic collaborative project between Food Secure Canada and FLEdGE (Food: Locally Embedded, Globally Engaged) to map the existing agri-food policy landscape in Canada. The views presented are those of the author do not necessarily present those of either FSC or FLEdGe.



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Introduction

Environmental stewardship in agriculture is at the heart of this paper. Cuijpers and colleagues (2014, p. 7) refer to the notion of agroecosystems resilience as the ability “to cope with changes and disturbances”. Above-ground and below-ground ecological functions are said to be largely dependent on soil health, which serves as a starting point “to sustain ecosystem services like nutrient cycling, water storage, erosion prevention, disease suppression, pollination, climate regulation and animal health and well-being” (Cuijpers et al, 2014, p. 7.) Crowley and Slimani (2012) echo these variables in their sustainable food systems policy framework. When discussing environmental sustainability, the two authors refer to (a) air, water, soil and climate change; (b) living organisms, natural habitats and plant and animal health; and (c) waste, energy and nonrenewable resources. Sustainable production remains one strategy to reduce greenhouse gas emissions in the agri-food system. MacRae and colleagues (2013), for example, identify “food systems localization, (...) cooling and refrigeration and food waste minimization” as complementary strategies along the chain.

A multifunctional paradigm of agriculture “puts value on the non-commodity social, environmental, and rural development outputs of agriculture, and recognizes that the market will either not produce them or under produce them – and rewards agriculture for doing so” (Skogstad, 2012, p. 23). A normative approach emphasizes that “multifunctionality is an intrinsic quality of agriculture,” and argues for a coherent and integrated remuneration of the diverse set of functions agreed on by society (Mundler and Ruiz, 2015, p. 7). Blay-Palmer’s study highlights three founding principles for Canadian policy to align with sustainable agricultural practices: the precautionary principle, multifunctionality and subsidiarity. (Please note that the terms regenerative, sustainable and multi-functional agriculture are used interchangeably in this discussion paper.)

From a policy perspective, environmentally sustainable agriculture is of critical importance in the context of climate change. Smit and Skinner (2002) identify several adaptation options in Canadian farming: technological developments, government programs and insurance, farm production practices and farm financial management, as well as information provision. Schmidt and colleagues (2012) speak of two alternative main policy mechanisms for “greening agriculture”: cross-compliance mechanisms and payments for ecosystem services (PES). These instruments are echoed in Verammen’s review (2011), which also highlights agri-environmental regulations (e.g. manure, pesticides, water use and contamination) and the promotion of environmental beneficial management practices¹ (BMPs).

This paper discusses agri-environmental stewardship in the Canadian provincial and federal institutional and policy environment in a three-pronged approach: (1) agri-environmental standards and programs, (2) ecosystems services and conservation programs, where we also discuss farmland preservation, and finally (3) the development of the organic food and farming sector.

We highlight that sustainable agriculture is dealt with in a piecemeal and contradictory fashion. For example, Growing Forward 2’s mission statement² emphasizes economic growth over rural, social and environmental sustainability. Further, the link between sustainable agriculture and healthy diets remains absent, meaning that critical gaps persist between dietary advice and agricultural practices (as well as

¹ Example of BMPs include: soil management, water wells, storage of agricultural waste and stream, ditch and floodplain management

² Mission statement of Growing Forward 2 (2013-2018): “[to] achieve a profitable, sustainable, competitive and innovative agriculture, agri-food and agri-products industry that is market-responsive, and that anticipates and adapts to changing circumstances and is a major contributor to the well-being of Canadians.”

aquaculture and fisheries). This is illustrated in Canada's dietary guidelines, which encourages the consumption of meat, dairy and fish, but does not account for the environmental stress these production systems are under or the impacts they cause (Lang & Barling, 2012, p. 4).

To better relate with the mandates of Agriculture and Agri-Food Canada (AAFC), the scope of this paper will be limited to biodiversity and agro-ecosystems services, dealing less with issues related to animal welfare and climate change. Furthermore, we will draw from the experiences in the United States and the European Union, when relevant, to provide comparative counterpoints in the context of international trade agreements negotiations.

Methodology

This paper is one of six discussion papers on the Canadian food policy landscape. The research was the result of a partnership between Food Secure Canada³ (FSC) and [Food : Locally Embedded, Globally Engaged](#) (FLEdGE), led out of Wilfrid Laurier Universities' Centre for Sustainable Food Systems.

The research questions, analysis and results were co-developed with community leaders in FSC's networks. The starting point of the research was to better understand enabling frameworks, good practices, and gaps and obstacles in provincial and federal policy interventions. We selected sustainable agriculture as topic of discussion because it appeared as a knowledge gap.

In the context of this paper, we draw from semi-structured interviews with three informants. We also relied on informal scoping conversations and available documentation and literature. The policy maps were used in two workshops (October 2016), and were sent to provincial/territorial food security networks, which provided opportunity for feedback. A first draft of this discussion paper was also reviewed Hannah Wittman, from the Faculty of Land and Food Systems at the University of British Columbia, and Av Singh, Organic and Rural Infrastructure Specialist with Perennia, Nova Scotia.⁴

As with other papers, we paid particular attention to the provincial and federal jurisdictions and to good practices that a joined-up approach to food policy could build on. The author's familiarity with the context in Quebec was useful, as the experience of that province is particularly relevant to the development of sustainable agriculture.

The reader can also refer to the annex, where a policy table and maps were designed to summarize and illustrate the discussion paper. The policy table includes both federal and provincial policies. The two policy maps respectively address the topics of farmland preservation and organic agriculture.

Other discussion papers drafted were: northern and remote Indigenous food sovereignty, community and household food security, local and sustainable food systems, new farmers, and healthy school food.

³ A national coalition of individuals and organizations working towards zero hunger, healthy and safe food, and sustainable food systems. See: foodsecurecanada.org

⁴ The author would also like to acknowledge the contributions of FSC staff in editing and formatting the final draft of this paper.

Agri-Environmental Policy

Canada's Sustainable Development Plan

The Federal Sustainable Development Act (FSDA), passed in June 2008, is the “most notable achievement with respect to sustainability” (Blay Palmer, 2012, p. 60) in Canada. The FSDA requires Canada to develop a Federal Sustainable Development Strategy (FSDS) that establishes milestones and streamlines 27 departmental sustainable development strategies. The Act also requires the creation of an advisory council and of an office within Environment Canada to monitor progress.

The absence of founding principles (multifunctionality, subsidiarity) and a “water[ed]-down version of the precautionary principle” (ibid, p. 61) are indicated as limits of the FSDA. Further, the FSDA is largely departmental and federal in scope, and therefore lacks cross-departmental and provincial policy integration.

Under the “Sustainable Food” section of the FSDS, the vision statement states: “Innovation and ingenuity contribute to a world-leading agricultural sector and food economy for the benefit of all Canadians.” Indicators and goals include wildlife habitat capacity on agricultural land, and soil and water quality⁵.

Agriculture and Agri-food Canada (AAFC) is responsible for goals relating to improving the soil, water⁶ and air quality, which it monitors through the National Agri-Environmental Health Analysis and Reporting Program (NAHARP) and the National Carbon and Greenhouse Gas Accounting and Verification System (NCGAVS) ([2012-13 Audit](#)). These goals outlined in the progress report were also featured in the federal [2020 Biodiversity Goals and Targets](#), which was issued following the 2010 Convention on Biodiversity.

The mandates of several departments⁷ also include certain facets of food-systems sustainability such as:

- The Department of Oceans is responsible for reaching 10% of coastal and marine area conservation by 2020 and improving the management of fish stocks and aquaculture.
- Environment and Climate Change Canada is responsible for the protection of species at risk, migratory birds and habitat conservation, as well as the quality of watershed basins (St Lawrence River, Great Lakes, Lake Winnipeg, etc.)
- Health Canada is responsible for food safety and nutrition.

Response to comments below

Based on the typology of Crowley and Slimani (2012) and Cuijpers and colleagues (2014), it appears that the important markers of multifunctionality such as genetic biodiversity, pollination, plant health and animal welfare, waste management, and energy efficiency are absent from these indicators. There is a

⁵ Environmental Sustainability of Canadian Agriculture: Agri-Environmental Indicator Report Series – Report #4

⁶ AAFC aims to achieve a value of 81/100 Water Quality and Soil Quality Agri-Environmental Performance Indices by 2030. See Clearwater et al. (2016).

⁷ Identify administrative sub-units in future scans.

single mention of AAFC collecting data for 14 indicators in Beneficial Management Practices⁸ (Vercammen, 2011), but the database does not appear to be publically accessible. Further, there are no mentions of sustainable food consumption and nutrition goals in the FSDS other than the fact that Health Canada is currently undergoing a consultation to revise Canada's Food Guide.

The Federal Sustainable Development Strategy (FSDS) is framed as Canada's contribution towards the Global Sustainable Development Goals. Since 2008, the FSDS has operated under three-year cycles ([see 2015 progress report](#)). To prepare the 2016-2019 strategy, a consultation was undertaken and a [report of the first draft](#) was conducted by Environment Canada, which then received recommendations from the [Standing Committee on Environment and Sustainable Development](#), including on amendments to the FSDA.

The committee suggested the inclusion of ten principles in the FSDA, such as the precautionary principle, the right to live in a healthy environment and recognizing the Earth's ecological limits. It also recommends extending the FSDS to all parliamentary committees, as it currently has a departmental scope only. Finally, the report calls to establish an advocacy office for future generations and continuing public engagement.

The [2016-2019 FSDS](#) outlines five goals: Taking Action on Climate Change; Clean Technology, Jobs and Innovations; National Parks, Protected Areas and Ecosystems; Freshwater and Oceans; and Human Health, Well-being and Quality of Life. The strategy states, "A number of you saw waste—particularly food waste and marine plastics—as a major gap in the FSDS." Further, the advisory council "discussed the unique challenges facing Indigenous communities, such as clean energy, food sovereignty, energy-efficient housing and resilience to climate change."

Current agri-environmental policy framework

Water quality⁹, nature conservation and biodiversity¹⁰, and plant and animal health¹¹ are legislated into federal agri-environmental law and regulation. However, Canada's agri-environmental policy landscape is relatively decentralized compared to the United States and the European Union (Montpetit, 2002; MacRae, 2002).

For instance, a comparative study of policy networks between Canada and the U.S. reveals that Canada was less successful in adopting environmental regulations for agriculture because of its relatively

⁸ In 6 areas: environmental farm management, soil quality, water quality, agri-ecosystem greenhouse gas emissions, biodiversity and production intensity

⁹ Canada Water Act

¹⁰ Canada Wildlife Act, Migratory Bird Convention Act, Species at Risk Act

¹¹ Health of Animals Act, Meat Inspection Act, Food and Drugs Act, Plant Protection Act

Table 4.4 Number of provincial legal acts addressing agriculture related issues with potentially most significant effect on farms in Saskatchewan, Alberta, Manitoba, Ontario and Quebec

General policy area	Saskatchewan	Alberta	Manitoba	Ontario	Quebec
General environmental issues	**	*	*	****	*
Water resources and conservation	***	***	****	*****	*****
Wildlife and habitat protection	***	***	****	*****	*****
Land use and planning and conflict resolution	***	***	****	*****	*****
Soil quality	*	*	*		*
Crop production and protection	**	***	***	***	***
Crop residue, manure, and waste product management	**	**	***	***	****
Animal health, welfare and identification	*****	*****	***	****	*
Food quality and safety	***	****	****	*****	*

Note: Each asterisk represents one provincial statute applying to some aspect of the given general policy area

decentralized agricultural policy, leaving provinces to develop measures as they saw fit (Montpetit, 2002). In reality, this leads to an uneven policy landscape, with few opportunities of knowledge transfer or reproduction of good policy practices (e.g. Quebec).

The following table, retrieved from Rajsic and colleagues' chapter on agri-environmental policy (2002, p. 65),¹² illustrates the decentralization of agri-environmental law and regulation. The table represents the number of provincial legislations related to different components of agricultural farming practices. We notice that soil quality, which is at the heart of ecosystem functions, has the least legal emphasis.

Montpetit observes that, "agriculture has in fact been exempted from the regulations established under general environmental protection laws in many OECD countries" (2002, p.2). 'Right to Farm' legislation, which has been instituted in all of the provinces, illustrates this 'agricultural exceptionalism'. These "laws aim to protect the farming industry by making it largely immune from nuisance lawsuits brought by neighbours who are adversely affected by farming operations" (McCormally, 2007).

Agricultural exceptionalism in environmental law may also be illustrated by highlighting gaps in federal policy (Crowley and Slimani 2012). We draw from two examples, genetic engineering and pesticide use¹³:

- Genetic engineering - Since the federal government launched a comprehensive review (1999-2001) with the [Expert Panel on the Future of Food Biotechnology](#)¹⁴, only 2 out of the 53 recommendations made by the panel were fully implemented by government (Andree, 2006; [CBAN, 2015, p. 5](#)). Issues over industry-sponsored evidence and the lack of transparency in the acceptance process continue to persist. Actually, Canada has "approximately 11.6 million hectares of GE crops and is the fourth leading country with regard to GE crop adoption."

¹² Omitted from this discussion paper is the role of agricultural extension agents. For example, Quebec agricultural programs support the [Clubs conseils en agroenvironnement](#).

¹³ We have not compared pesticide reduction programs between provinces, although this would possibly help identify good practices. Linked to agricultural pesticides is the issue of bee population collapse; the [Standing Committee on Agriculture and Agri-Food](#) has discussed the issue of monitoring. To be continued.

¹⁴ Health Canada, the Canadian Food Inspection Agency and Environment Canada tasked the Royal Society of Canada in 1999 "to provide advice on the Canadian regulatory system and the scientific capacity the federal government requires into the 21st century to ensure the safety of new food products being developed through biotechnology."

(Owen et al., 2015, p. 360). One recent case that received public attention was the approval by health and environmental authorities of genetically modified salmon in 2016.

- Pesticides - In the 1990s, authority over the application of the Pesticide Control Products Act (PCPA) was transferred from AAFC's Plant Products Division to a new unit within Health Canada, the Pest Management Regulatory Agency (PMRA). Despite the new PCPA (2006) and launch of the [Pesticide Risk Reduction Program](#), “[It] has never been designed to encourage pesticide reduction, focusing instead largely on the conditions to be met for the registration – or pre-market clearance - of pesticides” (MacRae and Winfield 2016, 169). One study indicates an information gap: “Unfortunately there has been little organized effort to measure directly the adoption of IWM [Integrated Weed Management] practices in Canada” (Owen et al., 2015, p. 373).

Agri-environmental programs

If we look more specifically to programs geared towards sustainable agriculture, the information compiled in the OECD [Green Growth Studies](#) (2013) is informative¹⁵. The primary policy framework for shaping the agricultural sector in Canada is Growing Forward 2 (GF2). “Emphasis is placed on improving input-use efficiency, reducing environmental impacts and increasing outputs through genetic improvements. Continued investments in R&D and technology transfer are key policy activities” (OECD, 2013, p. 90). The emphasis¹⁶ of GF2 is therefore largely on technology and genomic research, as well as farm insurance programs¹⁶. Even programs that include an environmental dimension¹⁷ are narrowly oriented toward technology and market development. In the context of this paper, we will put more emphasis on Environmental Farm Plans.

The OECD report also indicates that AAFC programs in renewable energy are exclusively focused on harnessing market opportunities of the agri-fuel sector¹⁸. Some observers note that the biofuels are not appropriately regulated in Canada (Crowley and Slimani 2012, p. 26)¹⁹. Further, neither climate-change impacts nor mitigation are mentioned as an environmental concern in the available GF2 documents ([NFU, 2013](#)).

We have not found an independent study that reviews federal programs that includes an environmental component, but from our policy scan, agri-environmental programs appear to be marginal. To give an order of magnitude, one study found that 2011 spending for environmental programs was only 1.89% of total expenditures of Growing Forward, with income support and stabilization programs representing over half of the budget at the time (Schmidt et al., 2012, p. 8).

Comparative research finds that “Canadian government expenditures on environmental initiatives in agriculture, as a share of farm income, are more than 10 times smaller than those in the US and the EU” (Eagle et al., 2016, abstract). Canada’s agri-environmental sustainability programs are contained at the farm level (Crowley and Slimani, 2012), and do not address the environmental performance of supply

¹⁵ See complete OECD policy matrix for Canada agri-environmental programs: <http://www.oecd.org/greengrowth/sustainable-agriculture/43676639.pdf>

¹⁶ Business risk management (BRM) programs consisted of 59% of total FPT spending between 2000 and 2009 ([CAPI, 2011](#)).

¹⁷ Agri-Environmental Programming/Environmental Farm Planning (EFP); the [Canadian Agricultural Adaptation Program \(2014-15 Audit\)](#); Agri-Flexibility and the [Agriculture Greenhouse Gases Program](#).

¹⁸ ecoENERGY for Biofuels Program, ecoAgriculture Biofuels Capital Initiative and Biofuels Opportunities for Producers Initiative and the NexGen Biofuels Fund

¹⁹ See the *Fuels Regulations*

chain actors^{20,21}.

One recent study (Eagle et al., 2016, p. 22), indicates “Conceptually, AgrilInsurance may have a bigger environmental impact than AgriStability. This view is partially based on the Cortus et al. (2009) findings, but also the more general notion that commodity-specific programs, including crop insurance, are more distorting. Furthermore, there is evidence that crop insurance results in wetland loss, increased nitrogen applications, and additional farming of marginal acreage. Of course, the size of these effects depends on size of the subsidized premium. (...) Of the Growing Forward programs, AgrilInvest and AgriRecovery are least likely to induce production and have negative environmental spillovers.”

Cross-compliance

Cross-compliance with agri-environmental standards is a key policy instrument for sustainable agriculture: “Cross-compliance refers to producers satisfying minimum environmental management requirements in order to maintain eligibility for government support” (Schmidt et al., 2012, p. 2). In Canada, “There are no requirements that Canadian producers receiving support comply with environmental standards” (Eagle et al., 2015, p. 1).

In the E.U., cross-compliance has been mandatory since 2005 and applied via a Single Payment System. Cross-compliance proves to be much more difficult to apply under existing frameworks in Canada. Specifically, “the AgriStability program is margin based and its payments vary by year. AgrilInvest, an entitlement program, is a better candidate for cross-compliance. However, more generally, a cross-compliance initiative tied to Canada’s BRM [Business Risk Management] programs would be distortionary because of the exemptions for supply management and the focus of insurance programs on crops rather than livestock” (Schmidt 2012, p. 32). In this context, applying cross-compliance would be moving away from BRM as a ‘one size fits all’ policy instrument.

To our knowledge, Quebec is the only province that has applied a cross-compliance mechanism to agriculture, which it calls the principle of [éco-conditionnalité](#). Implementation began in 2004 for the pork industry as a response to increased public accountability. Today, several programs by the provincial ministry of agriculture and its affiliated body, the Financière agricole du Québec, are allocated to producers with a balanced phosphorus assessment. This regulatory requirement remains minimal, and therefore is easily respected. Further, farmers with negative environmental impacts (e.g. high pesticide use, water pollution, soil erosion) are still eligible for funding. There have been repeated calls to increase the reach of its application (Mundler and Ruiz, 2015, p. 104).

Cross-compliance measures are common in Environmental Farm Plans (EFP): “In Ontario, for example, the EFP is an eligibility requirement to participate in other environmental initiatives such as the Healthy Futures initiative, while participation in the Nova Scotia EFP program is a key eligibility requirement for Nova Scotia farmers to obtain support from the Farm Investment Fund” (Atari et al., 2009, p. 1271).

²⁰ The [FDSD 2016-2019](#) includes: “As part of our commitment to work with the US and Mexico under the North American Climate, Clean Energy and Environment Partnership, we will develop and implement strategies to reduce methane emissions from agriculture and waste management – including food waste- among other key sectors.

²¹ Although it was not included in this analysis, to read more on eco-efficiency indicators developed by AAFC to assess the environmental performance of the food and beverage industry, see Marcotte et al. (2010)

Environmental Farm Plans (EFP)

The National Environmental Farm Plan Initiative was launched federally during the first Agriculture Policy Framework (APF) (2003), and allocated \$100 million over a four-year period (Robinson, 2006, p. 216). Environmental Farm Plans (EFP) were first implemented in Ontario (1993), and spread to the Maritimes (NS and NL in 1995, NB and PE in 1996,) and Quebec (1996). The APF helped to initiate EFP in the Prairies and British Columbia in 2003-2005 (AAFC, 2009).

Over the past two decades, there has been a “shift in the locus of control of the program, from producer organizations and the local farm community, to a program dominated by first the federal government and then the provincial government.” (Morrison and FitzGibbon, 2013, p. 401). The NFU policy brief on GF2 (2013-2018) indicates, “GF2 did not renew this program. Instead the environmental activities under GF2 are to deal with specific situations identified as priorities by the federal [government].” The centralization and “co-option of bottom up processes and programs by top down government interventions can lead to loss of integrity and legitimacy of the programs” (Morrison and FitzGibbon 2013, 379).

AAFC defines EFP programs as “a process through which farmers enhance their environmental management. In developing an EFP, farmers gain awareness of environmental issues related to their farming operation, assess the agri-environmental risks and benefits on their farm, and create an Action Plan to address risk(s). The Action Plan lists the BMPs required to eliminate or mitigate the risks identified in an EFP” (AAFC, 2006, p. 1). Others describe it as “a voluntary education and training (stewardship) program that supports farm families’ design and implementation of an action plan prioritizing safe practices and the protection of agroecosystems” (Morrison and FitzGibbon 2013, p. 379). Following a self-assessment and peer-review process, farmers develop an action plan and apply to the BMP program to receive federal funding to deliver the action plan. EFPs are largely voluntary, except in certain livestock-intensive regions (Vercammen, 2011).

Provincial agricultural departments are currently responsible for the management of Environmental Farm Plans. In some provinces, farmers’ organizations oversee the program, as in the case of BC (BC Agricultural Council), Ontario (Ontario Soil and Crop Association) and Nova Scotia (NS Federation of Agriculture). There are slight variations on how programs are delivered. In Nova Scotia, for instance, “the programme coordinator and an agricultural engineer visit each participating farm and assist in the production of an action plan” (Robinson, 2006, p. 216). In Quebec, the Ministry of Agriculture, Fisheries and Food externalized agricultural extension services to agricultural advisory clubs in the 1990s, which task agronomists with advising individual farmers around agri-environmental management and organic-sector production practices.

Program evaluation and academic literature generally focus on the participation of farmers and the adoption of best-management practices in EFP as measures of effectiveness. As of March 2008, 76,900 producers and ranchers had participated in the National EFP Initiative with 56,700 reviewed EFPs completed (OECD, 2013)²². One study in Nova Scotia ranks the main reasons farmers participated as: “Helping to publicize positive farm stewardship practices was reported as the most important reason for participating in the EFP scheme, followed by its use to help improve relationships with non-farming

²² AAFC has developed 14 BMP indicators based on 6 categories: environmental farm management, soil quality, water quality, agri-ecosystem greenhouse gas emissions, biodiversity, and production intensity (Vercammen, 2011).

neighbours, and to comply with government environmental regulations. In contrast, and somewhat a surprising finding, minimizing potential farm environmental risk, program administrators' *raison d'être* for promoting the NS EFP, was ranked the lowest" (Atari et al., 2009, abstract).

There are few overviews of the EFP's broader acceptability and effectiveness in transitioning toward sustainable production systems. For example, one author points out that, in contrast with EU agri-environmental schemes, EFPs are in keeping with intensive agriculture, but with the aim of limiting negative environmental impacts. The study further indicates: "Despite the differences of approach and scope between the EFP and EU agri-environment schemes, in both cases there is highly variable spatial implementation, limited and time-constrained financial support and relatively narrowly defined environmental benefits" (Robinson, 2006, p. 215).

EFPs are managed provincially under the APF cost-sharing agreement and farmer compliance is a condition to access the federal Beneficial Management Practices program. The National Environmental Farm Plan Summit reveals the interest of mainstream farming organizations in moving EFP back to the federal level. Survey responses highlight that "participants saw value in EFPs (...) felt that the National EFP harmonization was worthwhile (...) [and that] EFP could cover other sustainability measures." (2017, p. 2) In this context, it is likely to be developed in the context of Growing Forward 3 (2018).

Farmland preservation, conservation and ecosystem services

Farmland preservation²³

Agricultural land-use planning and farmland preservation currently operates under both municipal and provincial jurisdiction. Data on land-use change was monitored at the federal level by the Lands Directorate of Environment Canada which monitored land-use change through the Canada Land Use Monitoring Program (CLUMP) in the 1970s and 1980s, but barely exists today (12). Conference proceedings of the 2016 National Forum on Farmland Protection in Canada note that there are no federal targets nor fixed limits on farmland loss, and a substantial lack of data on how much prime farmland is left, who owns it and whether policies are having the desired impact (Connell 2016, p. 7).

The National Forum on Farmland Protection proceedings also provide an overview of the strengths and weaknesses of current practices. Given the roles of both municipalities and provinces, there is a lot of regional variation, and diverse interests to engage with to effectively preserve and manage farm land. Agricultural land-use planning is a policy arena that combines both territorial and sectoral provincial policies, rendering integration across jurisdictions a challenge. There is, however, potential for overlap and innovation between natural-heritage protection, topsoil protection, taxation, infrastructure investment, agricultural economic development, and local food systems (Connell 2016, p. 5).

The state of land-use planning in Canada shows that "provincial mechanisms regulating land use vary in strengths and tools" (12). A comprehensive scan of agricultural land-use planning in Canada, the [Agricultural Land Use Planning Project](#), assesses provinces on several criteria, based on whether they manage to minimize uncertainty, maximize stability and accommodate flexibility of agricultural land use, and integrate land-use planning across different jurisdictions. A summary of results is outlined below.

²³ See Map 1 in annex: "Farmland preservation"

(Connell et al., 2016)

Table 1. Summary of assessments of provincial legislative frameworks in Canada

	Maximise stability	Integrate across jurisdictions	Minimise uncertainty	Accommodate flexibility
Québec	*****	*****	****	**
British Columbia	*****	****	***	****
Ontario	****	****	****	***
Manitoba	****	***	**	**
Saskatchewan	**	****	***	**
Newfoundland Labrador	**	***	**	***
Nova Scotia	***	**	**	**
Alberta	**	**	*	*
New Brunswick	*	**	*	**
Prince Edward Island	*	*		

¹ At the time the analysis was completed, New Brunswick and Prince Edward Island were developing new policies to support agricultural land use planning. These new developments are not reflected in the assessments.
Legend: * = Very weak; ***** = Very strong

The strongest legislative frameworks were developed by Quebec, British Columbia and Ontario in the 1970s, but even today some of them are now being eroded (e.g. [Bill 24 in BC](#)). By contrast, Alberta, New Brunswick and Prince Edward Island have some of the weakest legislative frameworks for farmland preservation²⁴. Not-for-profit, farmland-trust organizations often play a complementary role, but do not have the resources at their disposal to scale up their work. In Quebec, however, the government announced that it would launch a province-wide land trust after a number of non-profit-led pilot projects.

The [policy brief](#) by Connell and colleagues (2016) relays that the federal government, and Agriculture and Agri-Food Canada in particular, should take active steps to protect farmland via various government processes (Privy Council, Cabinet and other legislative and regulatory mechanisms), and propose to make this issue “a foundation of a national food policy”.

Ecosystem goods and services (EG&S)

Aside from the regulatory approach articulated earlier (i.e. cross-compliance), the remuneration of ecosystem good and services (EG&S) is another policy instrument, which uses a market-based (Mundler and Ruiz, 2015; Eagle et al., 2015; Schmidt et al., 2012). This instrument is based on the natural capital approach, which “attempts to attach a synthetic price to EG&S, and recommends using this as a base for remunerating farmers” (Schmidt et al., 2012, p. 2). Payments for ecosystem services may apply for watershed services, biodiversity services, carbon sequestration and landscape beauty (Mayrand & Paquin, 2004).

Attaching a cost to EG&S inevitably “results in a trade-off between measurable outcomes and

²⁴ PEI and NB were developing new policies for agriculture land use.

simplification” (Schmidt et al. 2012, p. 31), but holds the possibility of incentivizing private landowners to provide positive externalities beyond the regulatory minimum requirements. Evidence is scarce, given the challenge “to measure the actual levels of desired EG&S outputs before and after initiation of programs” (Schmidt et al. 2012, p. 31). Despite a number of actors involved in data collection, “a lack of coordination and comprehensive models reduces the value of their efforts” (Schmidt et al., 2012, p. 33).

Based on Schmidt (2012), there are currently two federal initiatives²⁵ that can potentially remunerate farmers for providing environmental goods and services:

- The [Ecological Gifts Program](#) provides tax credits or deductions when landlords donate ecologically sensitive land to registered charities with a mission to protect environmental heritage.
- The [Habitat Stewardship Programs for Species at Risk](#) provides program payments (\$12.2M/year) to projects that protect wildlife. It has involved a number of government actors (ECCC, DFO, Parks Canada, Interdepartmental Recovery Fund, and the Aboriginal Fund for Species at Risk).

Schmidt and colleagues refer to the [policy brief authored by Olewiler](#) (2008) from the Institute for Research on Public Policy, which provides a number of recommendations:

1. Investing in data collection to catalogue Canada’s stock of natural capital (Canada’s Conservation Plan²⁶),
2. Levy a tax on carbon and air pollutants to fund conservation initiatives (Canada’s Conservation Fund),
3. Require municipalities to implement incentive-based policies to secure natural capital through either tradable development rights or development-impact fees. The first two options would be led federally, and the third one implemented by provincial governments.

Alternatively, and working within current frameworks, informants mentioned:

1. The cap-and-trade²⁷ system being implemented in Ontario, Quebec, Manitoba and California (i.e. Western Climate Initiative²⁸) might be an opportunity to design protocols around carbon sequestration for agriculture, forests and riparian reserves,
2. The [Green Infrastructure Fund](#) (\$19.7 billion over 10 years) which could help evaluating costs, risks and benefits of built infrastructure (e.g.. a dam to control flooding) compared to natural-capital approaches (e.g.. rehabilitating habitats to retain water and improve its quality, while empowering rural communities).

Alternative Land-Use Services

Alternative land-use services (ALUS) is a local-level program that compensates farmers for generating ecosystem goods and services by applying a ‘fee-for-service’ approach at fair market value (Blay-Palmer, 2012). The program adopts a landscape-level, community-led and farmer-delivered approach to provide a habitat for birds and pollinators, restore wetlands and forests, protect soils from nutrient runoff and increase carbon sequestration. “An important feature of the ALUS program is that it provides incentives to farmers instead of regulating them” (Blay-Palmer, 2012, p. 45).

²⁵ Growing Forward funding has also been funnelled to several provincial initiatives: the Agricultural Stewardship Program (PEI) and the Water Management Program (Schmidt et al., 2012).

²⁶ A [National Conservation Plan](#) was announced in 2014 by the previous government; it is unclear if it was continued or not.

²⁷ There are critiques of cap-and-trade.

²⁸ It is unclear if British Columbia is still involved.

The first ALUS program was implemented in the town of Blanshard, Manitoba (2005), supported with funding from the municipality and the province and in partnership with the Keystone Agricultural Producers and the Delta Waterfowl Foundation. Since then, it has spread to Norfolk County (ON, 2007), Vermilion River County (AB, 2010), and continued to expand (MB, AB, SK, ON, QC), often through funds provided by municipalities and conservation districts. The financial realities of ALUS remain a barrier, and [ALUS Canada](#) became an independent, nationally registered non-profit organization through the support of the Weston Family Foundation. While ALUS “should not be viewed in isolation” (Schmidt et al., 2012, p. 32), there is potential to connect with other programs.

Prince Edward Island was the first to adopt a province-wide ALUS program²⁹ to address the significant environmental issues caused by agriculturally intensive production systems. Manitoba has recently announced its commitment to ‘scale up’ its pilot projects provincially, but this time to mitigate flood and water quality issues. Other provinces have developed programs such as the [Species at Risk Stewardship Fund](#) (Ministry of Natural Resources and Forestry of Ontario), and the Recreational Access Management Program (Alberta Sustainable Resource Development).

ALUS programs largely remain ad hoc despite spreading through the leadership of farmer associations, municipalities, conservations districts and provinces. The next Growing Forward FPT cost-sharing agreement could bring ALUS to a national level: “A cost-benefit analysis of the potential for a national ALUS program estimates a set-aside of thirty-seven million acres at a cost of approximately \$740 million, with associated benefits of \$820 million. However, in the context of overall agricultural payments, the program cost estimate is relatively small (....) A national ALUS program would equate to 16.4 percent of 2006 farm program payments. And presumably it would replace some existing programs, such as Green Cover, and some of Environmental Farm Plan cost-share programs, so it would net out even lower.” (Blay Palmer, 2012, p. 44).

The development of the organic sector³⁰

Despite the many public benefits associated with the organic farming and food sector, such as addressing pollution problems, reducing greenhouse gas emissions and improving biodiversity (MacRae et al., 2002), it is largely contained as a sub-sector in agriculture and agri-food with no policy linkages with agri-environmental and conservation programs or policy frameworks. And although the organic market is on the rise in Canada, the sector is largely immature compared to the US and the EU (MacRae et al., 2002).

Federal involvement

In 2002, AAFC commissioned a strategic plan for the organic food and farming sector ([MacRae et al., 2002](#)). Many of the challenges this sector faces have persisted in the areas of market development, production and processing, organizational capacity, and public perception. Some notable challenges include: insufficient government support (notably for transitioning to organic farming practices and for young farmers), shortages in organic feed, contamination by genetically engineered (GE) crops, insufficient domestic supply to meet demand, and regulatory and institutional obstacles (e.g. food safety,

²⁹ The ALUS program is co-managed by the Department of Agriculture and Forestry and the Department of Communities, Land and Environment

³⁰ See Map “Supporting organic agriculture”

marketing boards).

Development of organic standards began in 1999 by the Canadian Organic Advisory Board³¹, and became mandatory in 2009,³² resulting in the Canadian Organic Regime which regulates interprovincial trade and import/exports. In addition, several provinces have made it mandatory to respect federal standards within their respective domestic markets (BC, MB, NB and NS). Quebec initially developed its own standards, and then folded in federal regulations (OCO, 2016). The rest of the provinces do not have voluntary standards for marketing within their borders, though Alberta is currently studying the implementation of such an approach (OCO, 2016).

Since federal standards have become mandatory, AAFC has funded the creation of the [Organic Value Chain Roundtable](#) (OVCRT) and the development of its [2013-2018 strategic plan](#). The OVCRT is one of thirteen national sectoral roundtables (others include beef, grains, pulses, etc.), and acts as a government-industry forum working towards a “competitive, innovative and profitable Canadian organic sector” (2013, p. 4). In the context of its strategic plan, the OVCRT launched four working groups (WG) which are coordinated by a steering committee:

- Regulatory WG: to address regulatory gaps and technical barriers among provinces and between Canada and its trade partners, to collect data, and address ‘natural’ product claims and GE contamination.
- Market development WG: to implement a national organic-branding strategy.
- Research and innovation WG: the OVCRT has coordinated with the [Organic Science Cluster II](#)³³, administered by Dalhousie University’s Faculty of Agriculture. OSCII has conducted research on field and horticultural crops, livestock, pests and processing in 36 research institutions/facilities. Observers have noted, however, that in 2015, these investments only amounted to 0.25% of the annual R&D budget in agricultural research (Rabinowicz and Ross, 2017).³⁴
- Increasing Canadian Capacity WG: to identify processing bottlenecks, increase the number of certified operators, increase self-sufficiency in organic seed production and assess capacity to access existing or emerging markets.

In 2016, the OVCRT shifted to a task-force model when co-chairs “presented an alternative governance model that would eliminate Working Groups and establish multiple time-bound, targeted Task Forces intended to address OVCRT priority areas, increase outputs, better utilize resources and attract new expertise.”³⁵ Four Task Forces were launched in March 2016 (focused on investment, data, supply capacity and research needs,) and two more were added in March 2017 (focusing on carbon sequestration and pricing, and public trust).

From a policy perspective, the available OVCRT meeting notes (2016) highlight a number of punctual policy issues being addressed:

³¹ Canadian General Standards Board from Public Works and Government Services Canada

³² The Organic Aquaculture Standards was published by the Canadian General Standards Board (CGSB) on May 10, 2012

³³ OSC II has received the support of up to \$8 million from Agriculture and Agri-Food Canada (AAFC) under its Growing Forward 2 AgriInnovation Program

³⁴ “Agriculture and Agri-Food Canada’s 2016 overview reports that \$649.5-million was invested in agricultural research and development in 2015. Only \$1.6-million of it went to organic agriculture in that same year.”

³⁵ [Organic Value Chain Roundtable Meeting Summary](#): March 7 – 8, 2016. 14th meeting – Ottawa, Ontario

- The OVCRT recommended that crop-insurance programs in the next agricultural policy framework recognize margin differences between organic and conventional products and that the financial difficulties associated with the regulated, mandatory three-year period when transitioning from conventional to organic farming be addressed.
- The OVCRT has tried in the past to get an exemption by the Pest Management Regulatory Agency (Health Canada) for food products (i.e. garlic, mustard, corn nuts) that manage diseases/insects/weeds.
- The OVCRT has participated in updating the Equivalency Arrangements for organic agri-food products with international trade partners (e.g. E.U.).
- Industry members from the OVCRT want the Canadian Food Inspection Agency (CFIA) to provide data from Certification Bodies, establish equality in organic-fee collection, and expand the scope of the organic standard beyond food to include other products such as cosmetics, pet food, fertilizer, and textiles.

Provincial and inter-provincial initiatives

What measures are in place to encourage the transition towards organic farming practices?

In the west, the [Prairie Organic Grain Initiative](#) (POGI) has matched funding between the federal Western Diversification Program (\$2.2 million) and industry partners (\$1 million). POGI aims to increase the acreage of organic production in the four provinces participating in the project.

The Maritime provinces have also been active. New Brunswick³⁶ and Nova Scotia have offered transition support to new entrants, through their [Agriculture by Choice](#) and [HomeGrown Success](#) programs, respectively. In the absence of provincial regulations, the [Organic Industry Development Program](#) in Prince Edward Island stands out for having four complementary programs aimed at driving competitiveness, converting land to organic production and implementing strategic initiatives.

Quebec's experience is perhaps the most similar to continental Europe, where there is more support for organic agriculture. The [Stratégie de croissance du secteur biologique](#) invests \$9 million into a series of measures. These include: a program to support conversion to organic agriculture, covering the costs of agricultural-extension experts, helping the Filière biologique in its promotion efforts, and funding research. This strategy plans to stream funds to existing efforts, such as the [programme Prime Vert](#) and agricultural land-use plans. While this organic-sector strategy is novel, it represents less than 1% of the financial resources invested in agriculture and agri-food.

The organic agriculture and food sector is fairly decentralized, and some would say fragmented - with over 40 certification bodies and four national organizations (MaRae et al., 2002). Several respondents indicated the OVCRT as an opportunity for policy change (I15, I17). The OVCRT provides insights into some of the policy gaps and challenges that could be addressed by a joined-up approach. Some of these were echoed in our interviews: not having access to data collected by CFIA's Canadian Organic Office, being in competitive disadvantage relative to USDA's programs, and misalignment of crop insurance schemes.

³⁶ The Capturing Organic Development Opportunities was made possible under GF2, but expired in the 2013/2014 fiscal year.

One respondent told us, “One issue is the lack of funding and low capacity of the organic sector to organize itself” (117). Stakeholders have also mentioned establishing equality in organic-fee collection in the OVCRT. The OVCRT is a unique body, but will require more resources and capacity to coordinate across provincial- and national-sector organizations and governments.

Several proposals were voiced, such as having comparable “check off” procedure, to collect fees for industry organization that represent the organic sector provincially and nationally, instead of conventional commodity groups and marketing boards (117). One challenge becomes adjusting internal programs in individual supply-managed marketing boards. A previous policy scan mentions that marketing programs are implemented in a handful of marketing boards across the country to facilitate market access by organic producers and specialty farmers³⁷ (Young and Watkins, 2010).

³⁷ See FLEdGE-FSC discussion paper on Canadian policy landscape for local and sustainable food systems

Discussion

Good practices

- Environmental Farm Plans (EFP) and Alternative Land Use Services (ALUS) are models to enable cross-compliance mechanisms and payments for ecosystems services. Ontario was an early adopter of EFP. Prince Edward Island and Manitoba are leaders in terms of province-wide ALUS interventions.
- The discussion paper mentioned the case of Quebec in a number of policy areas – environmental cross-compliance, agri-environmental extension services, farmland preservation and organic transition – as relatively novel in the context of Canadian agricultural policy. A national food policy should promote these policy interventions and facilitate sharing and exploration of how Quebec’s approaches and policies could be adapted to other provinces.
- The Organic Value Chain Roundtable is a rare instance of national-level, multi-stakeholder dialogue that is specifically focused on sustainable agriculture and agri-environmental policy (115, 117). The OVCRT has made a number of policy recommendations to Health Canada and the Canadian Food and Inspection Agency.

Gaps and obstacles

- The Federal Sustainable Development Strategy does not reorient agricultural policy instruments (APF/GF) towards multi-functional agriculture, agro-ecosystem resilience, climate change adaptation or mitigation. AgriInsurance and AgriStability, both Business Risk Management programs, are likely to have negative environmental impacts (Eagle et al., 2016). The application of cross-compliance mechanisms to BRM programs, however, is difficult because it would be distortionary due to exemptions for supply management and a focus on crops over livestock (Schmidt 2012, p. 32). Farmers with negative environmental impacts remain eligible for funding.
- In this context, environmental stewardship and organic farming is under-resourced compared to the EU and US: public investment is dedicated to genomic research, technological-transfer and export-oriented farm insurance programs.
- Payments for ecosystems services have been applied punctually in only two provincial programs but have not been integrated into national policy instruments.
- The regulatory landscape is uneven among the provinces, both in terms of agri-environmental and organic policy. Organic agriculture, which has positive environmental externalities, is not recognized as an agri-environmental practice under the current agricultural policy frameworks..
- At the federal level, biodiversity is neglected. Regulatory and accountability gaps persist in pesticide use, genetic engineering and bio-fuels, with information gaps in integrated weed management.
- Consumption and distribution are not addressed from an environmental standpoint. We found no initiatives attempting to reduce food waste and energy efficiency in the supply chain. There are no federal policy linkages between dietary advice and agri-environmental practices.

Opportunities

- Increase investment in agri-environmental stewardship and research and development in Growing Forward 3.
- Identify organic food and farming as a national, domestic and international trade priority and increase investment in research, training, agricultural extension.
- Reinstate Environmental Farm Plans nationally.
- Assess markets for ecosystem services with carbon taxing, cap-and-trade and/or the Green Infrastructure Fund or other potential institutional combinations.
- Conduct a cost benefit analysis of the potential for a national ALUS program. (Blay Palmer, 2012).
- Make farmland preservation a foundation of national food policy and monitor land-use change (Connell, 2016)
- Integrate sustainability in Canada's Food Guide and provide support to public institutions in the implementation phase.

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