

## *Chapter 4*

### **Investment in the Canadian food and agriculture system**

*This chapter presents an overview of Canadian regulations governing entrepreneurship, access to natural resources and products and processes and discusses the extent to which they affect the adoption of innovative practices and the introduction of new products in the country. It also discusses Canadian policies related to trade, investment, finance and taxation and their impact on the capacity of farms and agri-food firms to invest and take advantage of market opportunities.*

*The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.*

## Regulatory environment

The overall regulatory environment establishes basic conditions within which all firms, including farms, input suppliers, and food companies, operate and make investment decisions. Competitive conditions in domestic markets, including low barriers to entry and exit, can encourage innovation and productivity growth. Regulations may also enable or impede knowledge and technology transfer directly, contributing to more or less innovation. This section focuses on federal regulations governing competition and entrepreneurship, natural resource management, and agricultural and food products and processes. It also indicates the scope of provincial regulations and provides some examples.

### *Regulatory environment for entrepreneurship*

The Competition Bureau, an independent law enforcement agency, ensures that Canadian businesses and consumers prosper in a competitive and innovative marketplace. Headed by the Commissioner of Competition, the Bureau is responsible for the administration and enforcement of the Competition Act, the Consumer Packaging and Labelling Act<sup>1</sup>, the Textile Labelling Act and the Precious Metals Marking Act.

The Bureau investigates anti-competitive activities including: price fixing, bid-rigging, false or misleading representations, deceptive notice of winning a prize, abuse of dominant position, exclusive dealing, tied selling and market restrictions, refusal to deal (carry on business), mergers, multi-level marketing plans and pyramid selling schemes, deceptive telemarketing, and deceptive marketing practices.

Under the Competition Act, mergers of all sizes and in all sectors of the economy can be subject to review by the Commissioner of Competition to determine whether they will likely result in a substantial lessening or prevention of competition.

Internationally, Canada's Competition Bureau co-operates with counterparts in other countries to counter anti-competitive practices that cross borders. It also participates in international fora such as the Organisation for Economic Cooperation and Development (OECD), the International Competition Network (ICN) and the International Consumer Protection and Enforcement Network (ICPEN) to develop and promote coordinated competition laws and policies in the increasingly globalised marketplace.

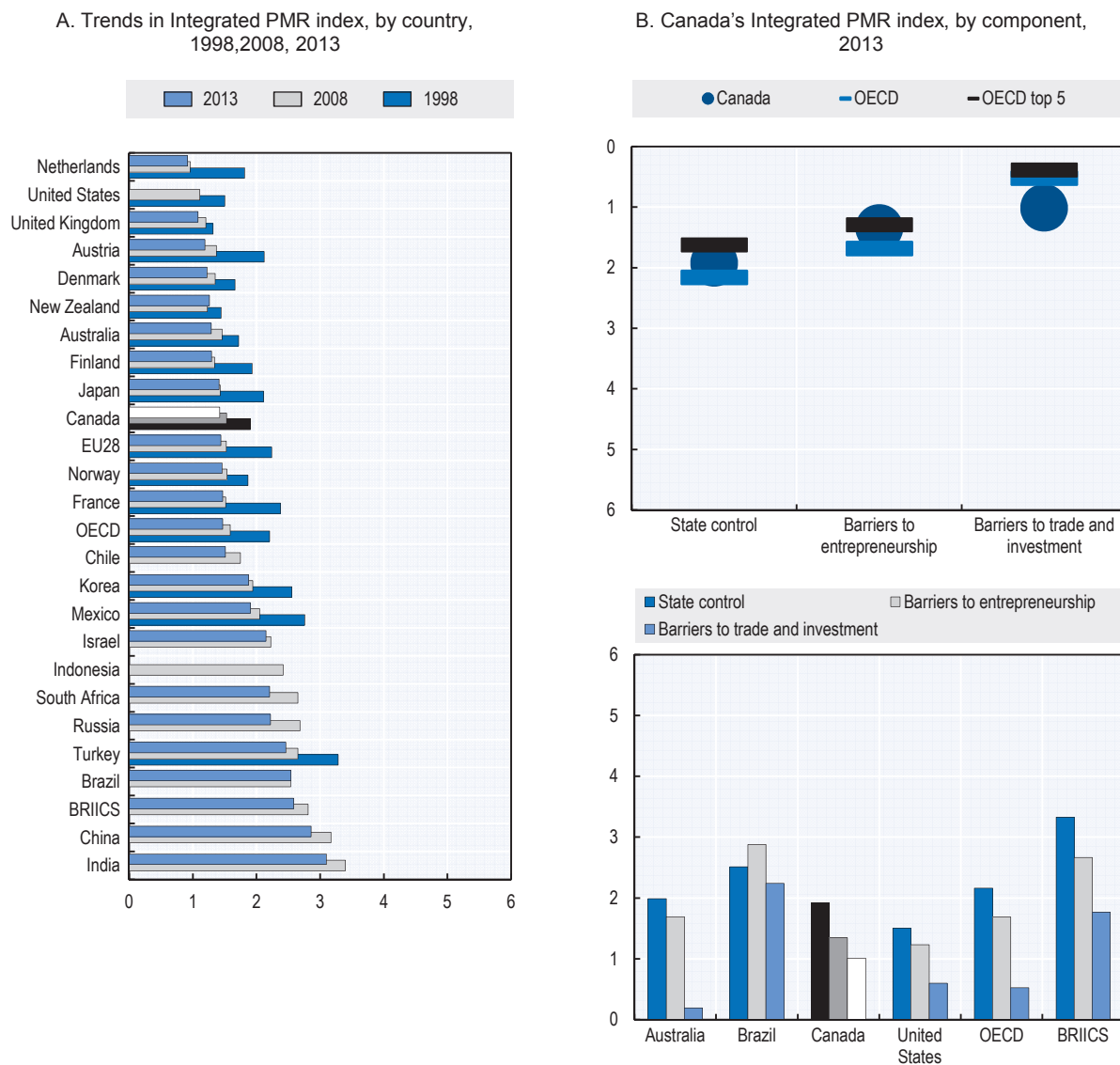
A Competition Policy Review Panel created in 2007 concluded that Canada has a competitive strength with primary advantages in location, natural resources, a diverse economy, a high quality public education, and institutional and political stability. The Panel, however, stated that a greater openness to talent, capital and innovation, vigorous competition, and a more ambitious mind-set would enhance Canada's productivity and competitiveness.

In 2011, the OECD's *Going for Growth* (OECD, 2011) identified Canada's network sectors and professional services as offering ample scope for regulatory improvement. There are signs that some of these barriers are being recognised and tackled, notably to improve competition in telecoms and mutual recognition of certified workers across provinces (OECD, 2012).

According to OECD Product Market Regulation (PMR) indicators, which measure the degree to which countries' regulatory frameworks promote or inhibit competition, regulations in Canada have become less restrictive in the last 15 years, a trend found in many OECD countries. Restrictions remain, however, higher than in Australia, the Netherlands, the United Kingdom and the United States (Figure 4.1). In 2013, barriers to trade and investment and barriers to entrepreneurship in Canada were less restrictive than state control, with scores in all three areas of product market regulation very close to the OECD average. Canada is also close to the OECD's five least restrictive countries regarding state control and barriers to entrepreneurship.

**Figure 4.1. OECD Integrated Product Market Regulation (PMR) Indicator, 1998, 2008, 2013**

Scale from 0 (least) to 6 (most) restrictive



Indices for EU28 and OECD are the simple average of member-country indices.

OECD top 5 refers to the average of the scores for the top five performers among OECD countries (Netherlands, United Kingdom, United States, Austria and Denmark), with US data referring to 2008.

OECD Product Market Regulation (PMR) indicators measure key regulations in the areas of state control, barriers to entrepreneurship, and barriers to trade and investment.

Source: OECD Product Market Regulation Database, 2014. [www.oecd.org/economy/pmr](http://www.oecd.org/economy/pmr).

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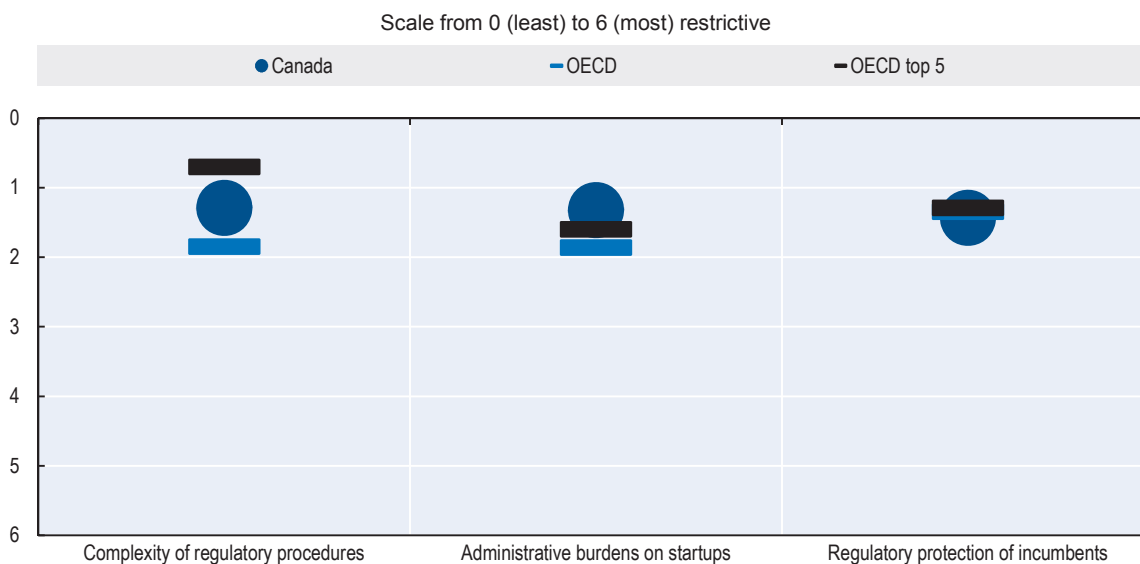
Among barriers to entrepreneurship, Canada is less restrictive than the OECD average in terms of complexity of regulatory procedures and administrative burdens on start-ups, but more restrictive regarding regulatory protection of incumbents (Figure 4.2).

Efforts to streamline regulations and improve transparency continue at federal and provincial levels. The Red Tape Reduction Action Plan<sup>2</sup> introduces systemic changes that will reduce administrative burden on businesses, including through the implementation of two fundamental systemic regulatory reforms:

- The “One-for-One” Rule requires that any new administrative burden on business from regulatory changes is offset through a commensurate reduction in burdens from existing regulations. It also requires that a regulation be removed each time a new regulation that imposes administrative burden is created.
- The Small Business Lens requires regulators to ensure that the particular challenges of small business are accounted for in regulatory design.

Efforts to reduce unnecessary regulatory burden and increase transparency are also taking place at the provincial level. For example, *Open for Business* reforms in **Ontario** include posting new proposed regulations for comment on the Regulatory Registry. It also includes working with industry leadership to define priority areas for the Ontario government to reduce regulatory burden and improve industry competitiveness and investment climate. **Saskatchewan** is taking steps to make regulatory frameworks simpler to navigate through the passage of the Regulatory Modernisation & Accountability Act. Under the provisions of the Act, the government is required to measure, report and reduce red tape across all sectors of the economy in an effort to promote commerce and innovation.

Figure 4.2. Barriers to entrepreneurship indicator, by regulatory area, 2013



Indices for OECD all are the simple average of member-country indices.

OECD top 5 refers to the average of the scores for the top five performers among OECD countries (Slovak Republic, New Zealand, Netherlands, Italy and United States), with US data referring to 2008.

Source: OECD Product Market Regulation Database (2014), [www.oecd.org/economy/pmr](http://www.oecd.org/economy/pmr).

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The extent to which business regulations affect innovation in farm and agri-food businesses would require closer examination of specific dimensions of PMR and information on any specific application of general rules to these businesses. Agricultural policy measures such as supply management and price pooling restrict competition in some commodity sectors. As in many countries, commodity boards and co-operatives are excluded from competition policy rules.

### ***Regulations on natural resources***

Regulations on natural resources are central to ensuring their long term sustainable use. In large part, they influence access to land, water and biodiversity resources and the impact that food and agricultural production systems have on those resources.

#### *General regulations governing access to natural resources such as water and biodiversity*

Natural resources in Canada are regulated under both the federal (e.g. Environment Canada, Natural Resources Canada, Fisheries and Oceans) and provincial jurisdiction. Subject to some exceptions, provinces exercise proprietary rights over **water resources** and have the authority to legislate in the areas of water supply, use, pollution control, hydroelectric development, irrigation and recreation.

The Canadian Parliament legislates on water and water-related activities over which the federal government has jurisdiction:<sup>3</sup> fisheries, the protection of navigable waters, shipping, some specific aspects of environmental protection, drinking water in areas of federal jurisdiction, international water management, and federal-provincial-territorial cooperation in water resources planning and management.

Some of the recent changes to the *Fisheries Act* (June 2012) are meant to increase the efficiency and predictability of the regulatory system.<sup>4</sup> The new regulation distinguishes waterways that need protection (i.e. supporting fisheries) from those that do not (e.g. ditches and agricultural channels).<sup>5</sup> Farmers and landowners can now make changes to ditches and other agricultural changes without the need for an environmental assessment (re: fisheries) allowing them to be more innovative in their farming practices and to improve their use of the water resources, subject to other processes in place.

There is an enormous variation from province to province in how water is governed, depending on specific issues related to provincial water resources. For example, a prior allocation system is used in Alberta, while in Ontario those wishing to take more than 50 000 litres of water per day must acquire a permit from the provincial government. For agricultural water users, the result is a widely varied security of access to water across provinces.

Local governments and communities (including rural communities within watershed groups) establish local by-laws. Municipalities have key responsibilities for drinking water provision and land use planning under the authority of provincial statutes.

In Canada, natural resources like **wildlife** and fish are held in trust on behalf of citizens by provincial governments, but the federal government also has some jurisdiction in national parks and wildlife areas. The habitat in which these resources exist is a mix of private land, Crown land that is leased for use by the private sector, and Crown land managed by government. The private sector owns or manages under lease a significant portion of the habitat used by publicly owned natural wildlife. Federal and provincial governments have addressed the market failure associated with this un-priced social benefit by enacting endangered species legislation. There are also a number of provincial endangered species acts, such as the Ontario Endangered Species Act and the federal Species at Risk Act (Environment Canada). Farmers who provide habitat for endangered species are eligible for some cost share programmes, under which they can recover some of the additional incurred costs.

### *Environmental regulation*

The federal government has minimal environmental responsibility through its exclusive jurisdiction over federal land, but is involved in several areas. The *Fisheries Act* and the *Canadian Environmental Protection Act* are examples of federal regulatory legislations related to agriculture. The *Canadian Environmental Protection Act* administered by Environment Canada addresses air pollution and toxic substances and involves the agriculture sector when developing risk management plans for listed substances. The *Fisheries Act*, administered by the Department of Fisheries and Oceans, provides protection of fish, fisheries and fish habitat from pollution, prohibiting the deposition of harmful substances into fish-bearing waters or watercourses that may eventually enter fish-bearing water. Harmful substances include suspended solids, fertiliser, manure, fuel and pesticides. The *Fisheries Act* has been amended to require reviews only when the development will cause “serious harm to fish,” which is the death of fish or any permanent alteration to, or destruction of, fish habitat. Municipalities could be in violation of the Act if their effluent is harmful to fish. Many other federal departments/agencies are directly or indirectly involved in environmental issues (e.g. Transport Canada, Natural Resources Canada, etc.).

Provinces have primary responsibility over property and civil rights. Certain provinces have control over principal agricultural operations and concrete environmental issues related to agriculture. Many provinces have delegated some of this responsibility to local governments through their land use planning and zoning powers.

### *Regulations on agricultural practices*

Regulations play an important role in the agri-environmental policy approaches to water quality in several provinces, ranging from broad prohibitions or requirements, to very prescriptive details about farm management practices (Vojtech, 2010). Canadian agri-environmental regulations focus on various aspects of production and include prohibitions and requirements on waste and nutrient management, water use and quality, limits on the storage and application of chemicals and pesticides, buffer strips and green coverage requirements. Some of these requirements are specific only to agriculture, while others are part of broader national environmental legislation affecting many sectors, including agriculture. Environmental regulations can come from both federal and provincial governments. Selected federal and provincial programmes for the adoption of agri-environmental practices are mentioned in Box 6.4.

### *Agricultural land regulation*

Regulations governing agricultural factor markets will affect the type of innovation developed and adopted. Land, in particular, is subject to a number of rules such as land ownership systems, rental arrangements, inheritance laws, land tax provisions and regulations on land transactions, which can have specific provisions for farm land in some countries (OECD, 2005).

In Canada, land use policies (e.g. property rights, property taxes, zoning and urban development) are solely under provincial/municipal jurisdiction and vary by province. Some provinces like Quebec, protect agricultural land through strict zoning. In Manitoba, municipalities have a development plan designating lands for specific purposes. The provincial government encourages them to adopt zoning by-laws and land use policies that enable agricultural producers to diversify their on-farm operations, often in farm-related activities such as processing and agri-tourism. Ownership restrictions vary greatly by province, with some provinces having rules in place to limit or restrict foreign ownership of farm land (Alberta, Saskatchewan, Manitoba, Quebec and Prince Edward Island) and others having few restrictions. For example, the Saskatchewan Farm Security Act includes regulations affecting agricultural property rights with the aim to maintain opportunities for Saskatchewan residents to acquire farm land for agricultural purposes and to support the development of strong rural communities.

According to the 2011 Census of Agriculture from Statistics Canada, over 60% of total land in agriculture was owned by those who operate it (Statistics Canada, 2011). However, the share of rented land and land leased from government increased slightly over the last decade. There were several factors contributing to this increase, such as rising land prices and an ageing farm population. Land rental is a less capital-intensive means of expanding an operation. The current practice of non-farmers and investment funds investing in land and renting it out to farmers also contributes to this trend.

In the last several years, Canada has seen an increasing proportion of land being purchased by non-farmer investment groups such as AgCapita, Bonnefields Financial, Assiniboia Capital Corp and others (Carlberg, 2011). Institutional investors appear to be most active in markets where relatively low-cost land is still available, but these areas are becoming fewer all the time. In areas where land prices are relatively high, non-farmers generally appear to be less willing to compete with area farmers when land becomes available although this is not universal across provinces. In Ontario, for example, companies have been relatively active outside of near-urban areas.

### ***Regulations on products and processes***

Regulations on products and processes aim to protect the environment and human, animal and plant health and can also impact natural resource use. There is also evidence that good product market regulation is associated with increased inflows of foreign direct investment and thus technology spillovers. Environmental and health related regulations could boost innovation by building consumer and societal trust in the safety and sustainability of new products or processes, but unnecessary or disproportionate regulations can stifle innovation and technological developments.

#### *General principles for federal regulations and standards affecting new processes and products*

Canadian regulations are science-based and informed by consultations with stakeholders. Regulations for new processes can be developed when a need or a gap is identified by government, industry, consumers, or other stakeholders.

The Cabinet Directive on Regulatory Management (2012) provides guidelines to regulators.<sup>6</sup> Standard regulatory development requires that Canadian regulators consider using international standards, where they exist, before adopting a Canadian standard. The Standards Council of Canada<sup>7</sup> leads on the development of standards in Canada and represents Canada in foreign and international forums.

Departments and agencies can also work with stakeholders to develop or modernise processes. An expansion of the uses of a regulatory tool, “incorporation by reference,”<sup>8</sup> is currently being discussed in the Canadian Parliament. The adoption of the Bill would allow regulators to more easily incorporate standards and requirements created by an international standard setting body, or to adopt requirements that have already been adopted by another jurisdiction or expert body. One of the advantages of incorporation by reference is that the regulation-making authority does not have to reproduce the incorporated material in its entirety. This helps to avoid duplication and may promote inter-jurisdictional harmonisation.<sup>9</sup>

Current priorities for regulatory frameworks include the modernisation of regulations. This involves rationalising the government’s role, adopting incorporation by reference to update regulations rather than changing the whole regulation, increasing the use of outcome-based regulations rather than prescriptive ones, increasing regulatory alignment with the United States (Box 4.1), and reducing administrative burden (Red Tape Reduction Action Plan mentioned above). Efforts will also be made to improve predictability of regulations and to reduce certification time (Service Standards).

In general, the difference between federal and provincial regulatory authorities pertaining to products is that federal regulations apply to goods traded across provinces or internationally, while provincial regulations apply within the boundaries of a province. Most differences in product and process regulations between provinces and with federal regulations are the result of the natural

evolution of different regulatory systems and differences in updating schedules, but some of them act as trade barriers protecting stakeholders from interprovincial and international competition. The negotiation of bilateral trade agreements provides an opportunity to revisit provincial regulations, but difficulties arise when provincial specificities remain and limit the scope of bilateral agreements.

#### Box 4.1. Canada-United States regulatory co-operation

The Canada-United States **Regulatory Cooperation Council (RCC)** was created in February 2011. The initial RCC Joint Action Plan was launched in December 2011 to foster new approaches to regulatory cooperation. Agencies in both countries worked together on 29 initiatives identified in the plan (including ten initiatives with an agriculture focus); using a variety of tools, such as enhanced technical collaboration, joint development and recognition of standards, work-sharing and lasting solutions to avoid future misalignments from developing. These 29 initiatives covered a wide range of regulatory work, from transportation and agriculture to emerging areas such as developing a consistent approach to the regulation of nanomaterials.

The initial Joint Action Plan has delivered a number of important, specific results, including in the agriculture area:

- **Zoning for Foreign Animal Diseases:** The US Department of Agriculture and the Canadian Food Inspection Agency have adopted an arrangement for the mutual recognition of animal disease zoning decisions. Guidance for implementing the arrangement, including agreed-upon processes and conditions for zoning recognition, has been developed.
- **Crop Protection Products:** Canada's Pest Management Regulatory Agency and the US Environmental Protection Agency worked on aligning product reviews and risk assessment methodologies, including the development of a joint review process for pesticides with minor uses, which will reduce administrative burden on industry and provide simultaneous product access to growers.

Other cross sectoral initiatives of importance to agriculture include:

- **Nanotechnology:** The RCC Joint Action Plan proposes to share information and develop joint Canada-US approaches on regulatory aspects of nanomaterials. This will include developing consistent approaches to the risk assessment and management of nanomaterials, as well as sharing scientific and regulatory expertise. A nanotechnology work plan guiding efforts in this area was completed in 2012.
- **Small Business Lens:** The RCC Joint Action Plan proposes to share approaches and tools being developed by Canada and the United States to assess and account for the needs of small businesses when developing regulations. During the winter and spring of 2012, the small business lens working group's Canadian and American co-leads coordinated the completion of the small business lens work plan guiding efforts in this area.

The RCC Joint Forward Plan presented in 2014 discusses what has been accomplished with the initial 29 initiatives, and reflects on lessons learned by regulators and stakeholders who have worked on this effort. An approach to deepen and broaden our regulatory cooperation partnership moving forward is also presented.

Source: <http://actionplan.gc.ca/en/page/rcc-ccr/regulatory-cooperation-council> and <http://actionplan.gc.ca/page/rcc-ccr/cross-sectoral>.

#### *Regulations on purchased farm inputs, food, plants and animals*

In matters related to **food safety**, Health Canada is responsible for the development of policies, standards and regulations under the authority of the *Food and Drugs Act*, which provides overarching protection for consumers from any foods that are unsuitable for consumption, including those marketed exclusively within provinces. The Canadian Food Inspection Agency (CFIA)<sup>10</sup> is responsible for the enforcement of food safety standards through its food inspection and compliance activities. *The Safe Food for Canadians Act*<sup>11</sup> of 2012 consolidates food provisions administered and enforced by the CFIA to strengthen oversight of food commodities being traded inter-provincially or internationally. It is expected to be implemented in 2015.

Regulation of Canadian plant and animal health also falls under the mandate of the CFIA, which is currently carrying out a multi-year, systematic regulatory modernisation.<sup>12</sup> This modernisation is expected to result in the drafting and adoption of regulations that are, to the extent possible, outcome-



based, enabling more latitude in the processes that are used as long as the end result meets the required outcome.

Under Health Canada, the **Pest Management** Regulatory Agency (PMRA) works with its counterparts in other countries to align the processes used to regulate pest control products and ensure the protection of health and the environment. International regulatory cooperation includes standardisation of the type and scope of studies required to register a pesticide, the protocol followed in carrying out these required studies, the format and presentation of the submissions provided in support of a registration application, and the methods used to evaluate submissions and prepare reports. For example, the PMRA led an OECD Working Group on Pesticides to develop harmonised registration requirements microbial pest control agents and products.<sup>13</sup>

Standards related to the registration requirements of an innovative pest control product are reviewed based on need and in coordination with international regulatory partners. The PMRA also re-evaluates all pesticides on a 15-year cycle, to ensure they meet the latest health and environmental risk assessment standards.

Some **fertilisers** and most supplements are subject to registration and require a comprehensive pre-market assessment prior to their import and/or sale in Canada. The *Fertilizer Act* and associated regulations are intended to ensure fertiliser and supplement products imported into and marketed in Canada are safe for the environment when used as directed - which in turn would mean that farming land would be protected from harm from regulated products as long as they were used correctly. However, authorities do not extend “on-farm” or capture labour practices and farm enterprises, as land and labour are outside of the jurisdiction of the Act. Products that are exempt from registration are still subject to regulation and must meet all the prescribed standards at the time of sale or import. Products with a well-established history of safe use are typically exempted from the requirement to obtain pre-market registration.

The **Organic Products Regulations** (OPR) were introduced in 2006 in response to a stakeholders’ request to enable Canadian organic producers to retain access to the European Union, United States and Japanese markets. The OPR incorporates by reference the following two standards: General Principles and Management Standards [CAN/CGSB 32.310] and Permitted Substances List [CAN/CGSB 32.311]). They apply to organic agricultural products which cross provincial and international boundaries. The competent authority for the OPR is the CFIA Canada Organic Office. It is mandated that the OPR be reviewed every five years; however, this mandatory review did not take place in 2011 as expected due to lack of funding.

The regulatory framework regarding **animal health** reflects concerns that government and industry have about animal health, the economic impacts associated with animal disease and potential human health issues associated with animal disease. Standards reflect a perspective that pertains to preventing or responding to animal diseases.

Multiple factors and diseases play a role in developing the import conditions that are necessary to provide an appropriate level of protection (ALOP) for public and animal health. Import conditions have been established for many species and commodities following country evaluations and hazard identification for the particular animal or commodity to be imported. For animals or commodities that do not have previously established import conditions, a risk assessment can be undertaken, with the associated fees paid by the prospective importer, to evaluate whether the development of New Import Protocols – Procedures for Clients is warranted. The full costs of the assessment to determine whether import is feasible are assumed by the potential importer.

The CFIA also uses its regulatory authority as the basis for recognition of a specific country, or part of a country, as being free of, or as posing a negligible risk for, a particular disease. Import conditions or restrictions related to specific diseases, such as foot and mouth disease (FMD), tuberculosis (TB), and brucellosis, are often necessary. Once established, the specific conditions are published.

When innovations develop in processing or treatment, CFIA evaluates them when requested to determine if an equivalent level of protection can be established for the new methodology. If the regulations are outcome-based, then new import conditions can be implemented. Some regulations are not outcome-based, but are prescriptive in nature (i.e. “thou shall not” or “thou must” do x, y, or z for a particular import). These are reviewed and when possible are being revised to provide an ALOP to Canada with flexibility for assessing and adopting changes in science and technology.

The CFIA evaluates and regulates all **feed** ingredients, including those that are derived from innovative methods, in the same manner. Any feed ingredient that is new (i.e. not already listed in the Feeds Regulations), or has been modified such that it differs significantly from a conventional ingredient, is required to undergo a pre-market assessment and approval. The purpose of all feed assessments is the same: to ensure that the feed ingredient is safe (in terms of animal health, human health via food residues and worker/by-stander exposure, and the environment) and effective for its intended purpose prior to marketing. Box 4.2 explains how the regulation regarding the use of distillers' grains as a feed ingredient was adapted.

**Box 4.2. The example of distillers' grains (DG) from the fuel ethanol industry**

The use of distillers' grains as a feed ingredient is regulated under the Feeds Act and Regulations administered by the CFIA. In the mid-to late 1980s, a variety of types of distillers' grains, including those from barley, corn, rye, sorghum, and wheat, were listed as approved feed ingredients under Section 5.5, "Brewers' and Distillers' Products," in Schedule IV, Part I, of the Feeds Regulations. These feed ingredient definitions were developed to cover DGs obtained from distilleries producing alcoholic beverages, based on processes using food-grade ingredients and additives. Approval took into account the fact that beverage alcohol producers need to use approved processing additives and are already regulated under the *Food and Drugs Act* and its regulations.

In 2004, the CFIA's Feed Program began conducting inspections in ethanol-producing plants to obtain an overview of the manufacturing process and the processing additives used. From these inspections and from information supplied by the fuel ethanol industry, it was apparent that some of the additives used in the fuel ethanol manufacturing process are different from those used in the beverage alcohol production process - some had not been assessed for safety. Because of these differences, DGs resulting from fuel ethanol production were not automatically considered equivalent to the DGs listed in the *Feeds Regulations*.

The CFIA published on its website a regulatory guidance document entitled Ethanol Distillers' Grains for Livestock Feed, which set out the policy on the use of DGs produced as by-products of ethanol manufacturing that are sold, manufactured or imported into Canada as livestock feed. It is important to note that this policy document only serves to clarify how the existing *Feeds Regulations* apply to DGs, and does not introduce new regulations. It does not set out regulatory requirements for the manufacture of fuel ethanol or potable alcohol, as this is outside of the CFIA's mandate.

Source: Agriculture and Agri-Food Canada (AAFC), <http://www.agr.gc.ca/>.

Annex 4.A1 describes how standards for purchased inputs, feed and food products are established, evaluated and communicated.

The wide variety of challenges faced by different actors in the agricultural innovation system suggests a continuum of views on regulatory approaches by governments. When asked about the regulatory challenge to innovation, a panel of stakeholders from academia, innovation institutions and the industry pointed to the length of approval procedures, information requirements and unclear rules for some bio-products. They also mentioned some areas where regulations are missing and that insufficient human resources in the federal government working in regulatory areas contributed to delays in needed improvements. The difficulty for food products to obtain health claims was mentioned. As in many countries, the approval process for plants with novel traits is also very costly and drives small investors out of the sector. Experts recognise the difficulty for the regulatory process to be effective and fast, and at the same time transparent and open. While recognising the values of the system, in particular the science-based approach, many of the stakeholders surveyed would welcome a more pro-active, forward looking system that incorporates risk management aspects.<sup>14</sup>

## Trade and investment policies

Trade can facilitate the flow of goods, capital, technology, knowledge and people needed to innovate. Openness to trade and capital flows is conducive to innovation as it provides a larger market for innovators, reinforces competition, increases access to new technologies, ideas and processes, including from Foreign Direct Investment (FDI) and related technological spill-overs, and facilitates cross-country collaboration. Trade and investment openness can influence innovation throughout the food supply chain, from input suppliers to food service and retail firms. Input and output markets that operate effectively can foster productivity growth and more environmentally sustainable production.

### *Importance of trade*

The Canadian economy and the food and agriculture sector are exposed to trade and integrated in global value-chains. Mobility of goods and services is high (as is mobility of capital and labour), particularly following the 1980s US-Canada free trade agreement and the 1990s North American Free Trade Agreement (NAFTA). In 2010, three-quarters of Canada's exports went to the United States, and more than half of Canadian manufacturing sales were by affiliates of US multinationals. To reduce the dependence of the Canadian economy on US markets, the Government of Canada has concluded or is negotiating trade and investment agreements with other regions, in particular Latin America, Asia and the European Union. In particular, Canada joined the Trans-Pacific Partnership (TPP) negotiations with a view to deepen trade relationships with the Asia-Pacific region (OECD, 2013b). Agri-food trade is generally covered by these agreements. On 18 October 2013, Canada and the European Union have reached a political agreement on the key elements of a Comprehensive Economic and Trade Agreement (CETA). The agreement will remove over 99% of tariffs between the two economies and create sizeable new market access opportunities in services and investment. The European Union is Canada's second most important trading partner. When implemented after approval by respective institutions, the agreement is expected to increase trade flows in sensitive agricultural products such as beef and dairy products.

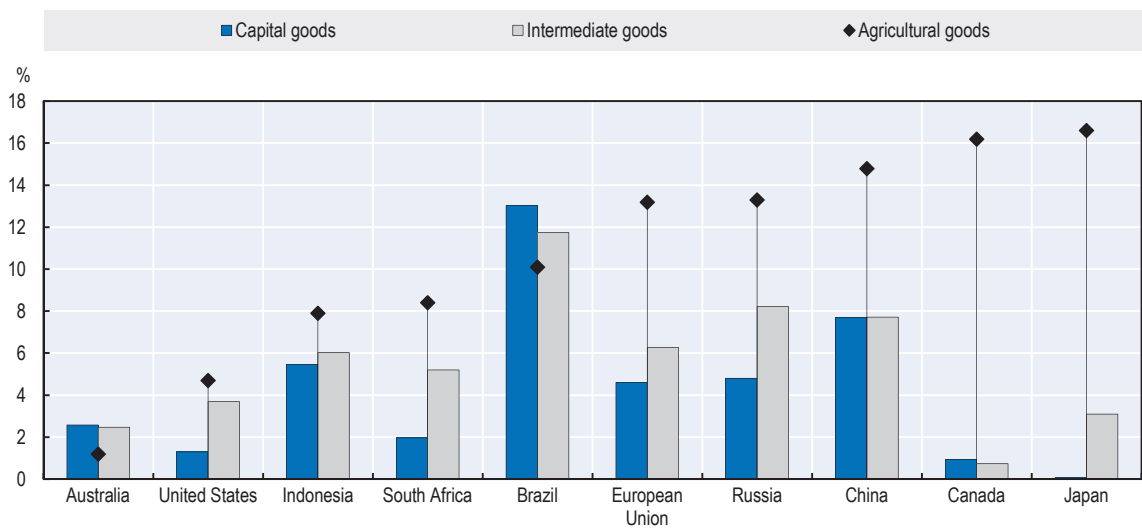
### *Barriers to trade and investment*

Industrial tariffs are relatively low in Canada, and contrast with relatively high agricultural tariffs (simple average of applied most-favoured-nation (MFN) tariffs) (Figure 4.3). In particular, tariff and non-tariff protection for capital and intermediate goods are very low in Canada. In 2009 and 2010, Canada unilaterally decided to eliminate tariffs on a broad range of manufacturing inputs, machinery and equipment. An OECD analysis (Miroudot, Rouzet and Spinelli, 2013) found that the resulting greater availability of specialised inputs and machinery equipment is likely to reduce production costs, improve efficiency in production processes and enhance the ability to innovate in downstream manufacturing industries, bolstering their own external competitiveness. The expected gains can be further boosted by a rise in foreign investment in Canada.

OECD PMR indicators also show that restrictions to trade and investment are relatively low in Canada, as in many OECD countries (Figures 4.1 and 4.4). On a scale from 0 to 6, the index of regulatory restrictions to trade and investment is below 1 on average, and no component is above 2. In terms of differential treatment of foreign suppliers, however, Canada is much more restrictive than the OECD average.

According to OECD **trade facilitation indicators**, which cover the full spectrum of border procedures,<sup>15</sup> Canada performs significantly better than the OECD average in the areas of fees and charges, simplification and harmonisation of documents, automation, governance and impartiality and is relatively on par with the OECD average for information availability, involvement of the trade community, advance rulings, appeal procedures and streamlining of procedures, according to OECD trade facilitation indicators (Figure 4.5).

**Figure 4.3. Tariffs for industrial and agricultural goods, 2012 or latest available year**  
Simple average MFN applied tariff rates<sup>1</sup>



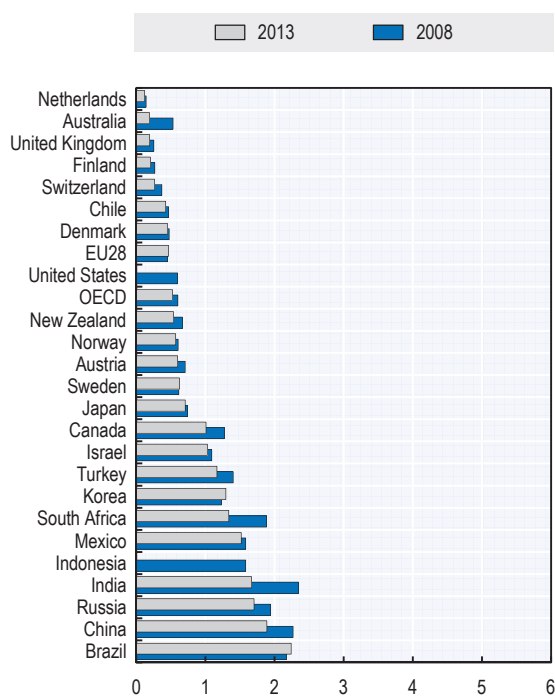
MFN: Most favoured Nation. 1. Tariff rates for agricultural products include both *ad valorem* duties and specific duties in *ad valorem* equivalent, while tariff rates for agricultural products only include *ad valorem* duties.

Source: UNCTAD Trade Analysis Information System (TRAINS) (for non-agricultural products) and World Tariff Profiles, 2013 (for agricultural products).  
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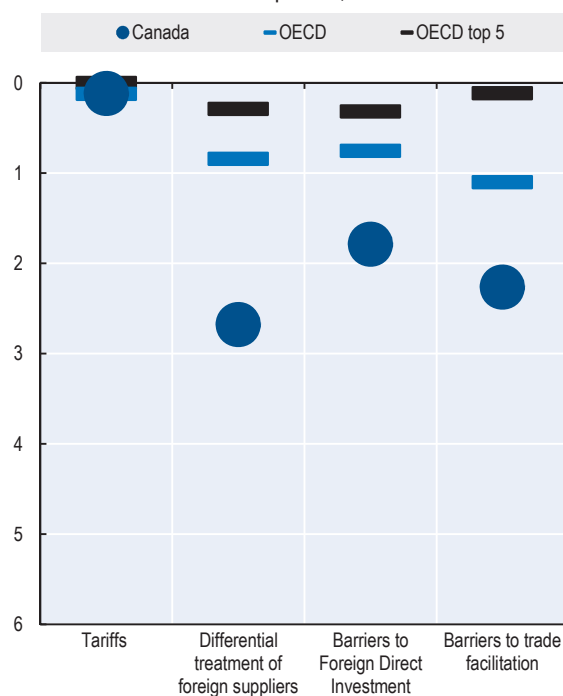
**Figure 4.4. Index of regulatory restrictions to trade and investment, 2008 and 2013**

Scale from 0 (least) to 6 (most) restrictive

A. Index of regulatory restrictions to trade, by country, 2008 and 2013



B. Canada's index of regulatory restrictions to trade, selected component, 2013



Indices for EU28 and OECD are the simple average of member-country indices.

Barriers to trade facilitation refer to the extent to which the country uses internationally harmonised standards and certification procedures, and Mutual Recognition Agreements (MRAs) with at least one other country.

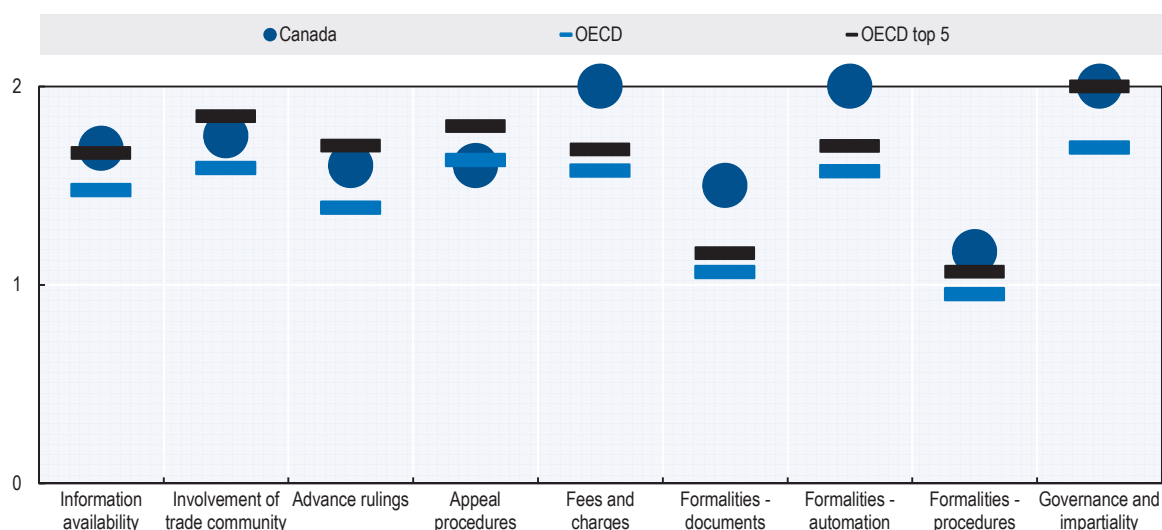
OECD top 5 refers to the average of the scores for the top five performers among OECD countries (Netherlands, Belgium, Australia, United Kingdom and Finland).

Source: OECD Product Market Regulation Database, 2014. [www.oecd.org/economy/pmr](http://www.oecd.org/economy/pmr)

StatLink <http://dx.doi.org/10.1787/888933250334>

**Figure 4.5. Canada's trade facilitation performance, 2010**

Latest available data, where 2 = best performance



Indices for OECD all are the simple average of member-country indices.

OECD top 5 refers to the average of the scores for the top five performers among OECD countries (Australia, United States, Netherlands, Switzerland and United Kingdom).

Information availability refers to the publication of trade information, including on internet, enquiry points.

Involvement of trade community refers to consultations with traders.

Advance rulings refer to prior statements by the administration to requesting traders concerning the classification, origin, valuation method, etc., applied to specific goods at the time of importation; the rules and process applied to such statements.

Appeal procedures refer to the possibility and modalities to appeal administrative decisions by border agencies.

Fees and charges refer to disciplines on the fees and charges imposed on imports and exports.

Formalities – automation refers to electronic exchange of data; automated border procedures; use of risk management.

Formalities – documents refers to simplification of trade documents; harmonisation in accordance with international standards; acceptance of copies.

Formalities – procedures refers to streamlining of border controls; single submission points for all required documentation (single windows); post-clearance audits; authorised economic operators.

Governance and impartiality refers to customs structures and functions; accountability; ethics policy.

Source: OECD Trade Facilitation Indicators. <http://www.oecd.org/trade/facilitation/indicators.htm>.

StatLink  <http://dx.doi.org/10.1787/888933250349>

### **Foreign Direct Investment policies**

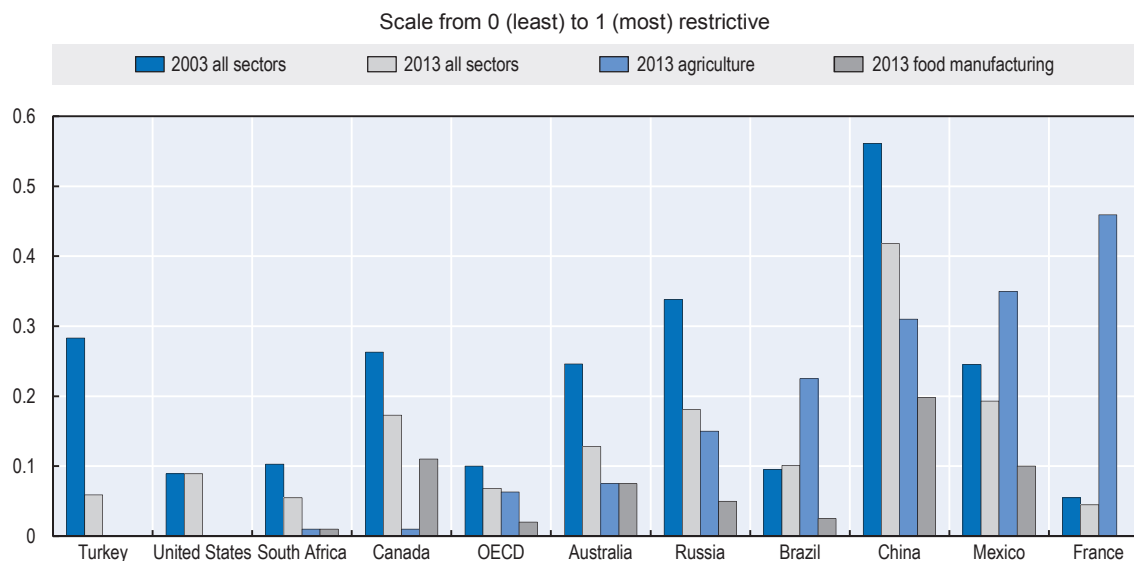
According to OECD data, restrictions to FDI in Canada have been reduced in the last decade and are now relatively modest (index 0.16 on a scale of 0 to 1), but they remain higher than in the United States, Australia, Brazil or France (Figure 4.6). They concern mainly screening procedures and prior approval of requirements, and foreign equity restrictions. Restrictions affecting FDI in agriculture are very low and those affecting FDI in food manufacturing are lower than the average of all sectors.

Low barriers to inwards FDI contributed to the rise in FDI stocks as a percentage of GDP from 0.20% in the mid-1990s to 0.36% in 2012 (Figure 4.7). This rate of penetration is higher than the OECD average.

In 2012, the stock of FDI in Canadian agriculture, forestry, fishing and hunting was CAD 1.5 billion, down slightly from CAD 1.6 billion in 2011. The stock of FDI in the Canadian food processing industry has increased from CAD 14.4 billion to CAD 16.0 billion between 2011 and 2012.

60% of this FDI originated from the United States, with Europe being the source for another 36% (Figure 4.8). In 2012, FDI in agriculture and food processing accounted for 2.5% of total FDI in Canada, compared to a share in GDP of 2.3%. If FDI in the beverage and tobacco industry is included, this percentage amounts to 3.4%.

**Figure 4.6. OECD FDI Regulatory Restrictiveness index, by sector, 2003, 2013**



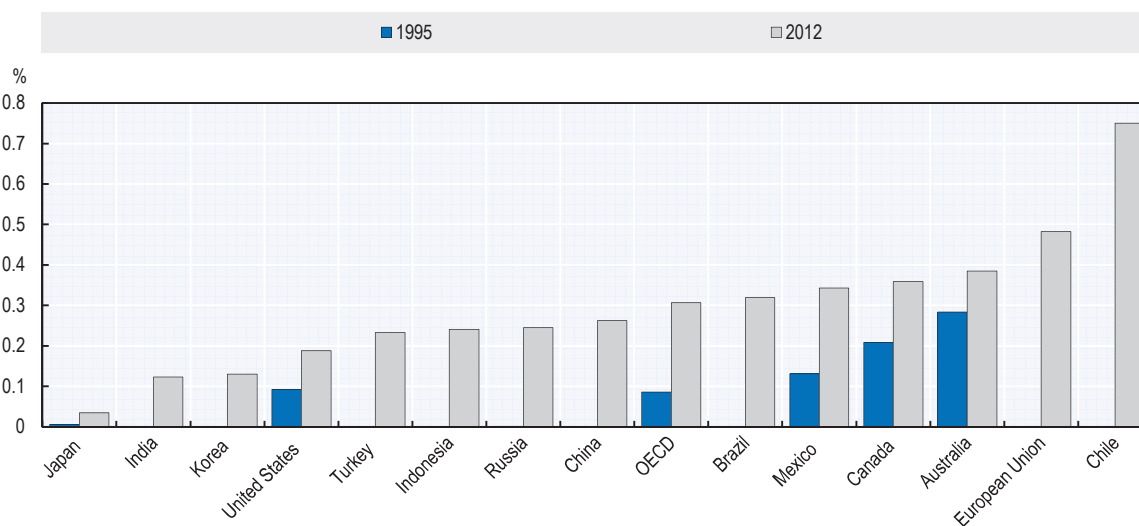
Indices for OECD are the simple average of member-country indices.

Four types of measures are covered by the FDI Restrictiveness Index: 1) foreign equity restrictions; 2) screening and prior approval requirements; 3) rules for key personnel; and 4) other restrictions on the operation of foreign enterprises.

Source: OECD Investment Statistics, <http://www.oecd.org/investment/fdiindex.htm>.

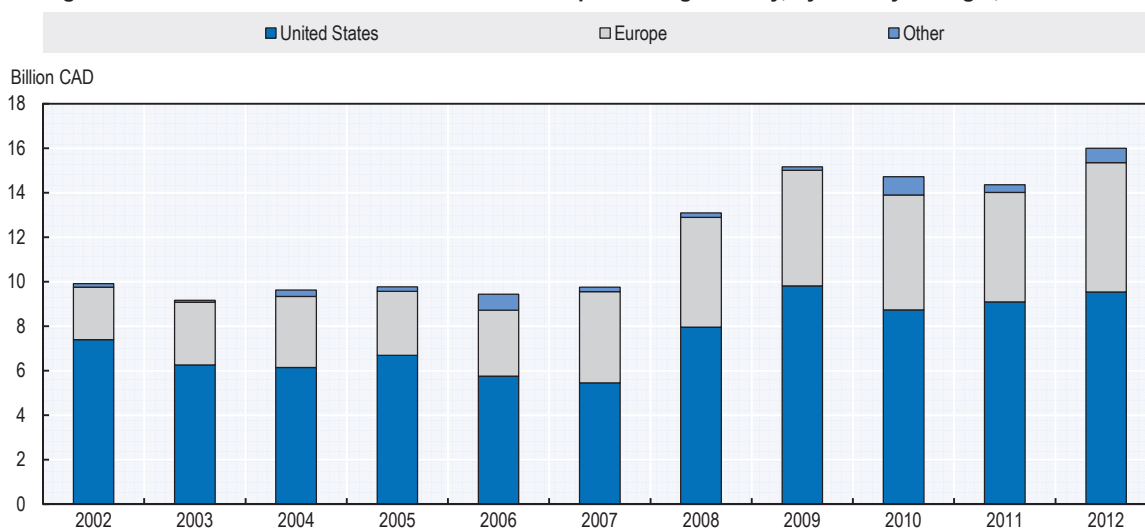
StatLink <http://dx.doi.org/10.1787/888933250352>

**Figure 4.7. Total FDI stocks as a percentage of GDP, 1995, 2012**



Source: OECD Investment Statistics, <http://www.oecd.org/investment/fdiindex.htm>.

StatLink <http://dx.doi.org/10.1787/888933250364>

**Figure 4.8. Stock of inward FDI in the Canadian food processing industry, by country of origin, 2002-2012**

The Europe region includes the whole European continent.  
 Figures are estimates and subject to revisions by Statistics Canada.

Source: Statistics Canada and AAFC calculations.

StatLink  <http://dx.doi.org/10.1787/888933250379>

## Finance policy

Efficient financial services are one key to enable balanced development of any economy and society. Policies that improve the functioning of financial markets can facilitate productivity enhancing investments in agriculture. Low-cost loans and venture capital<sup>16</sup> can also be an important source of funding for innovative firms with high growth sectors potential. Business angels<sup>17</sup> also play an important role in financing early stages of innovation (OECD, 2010).

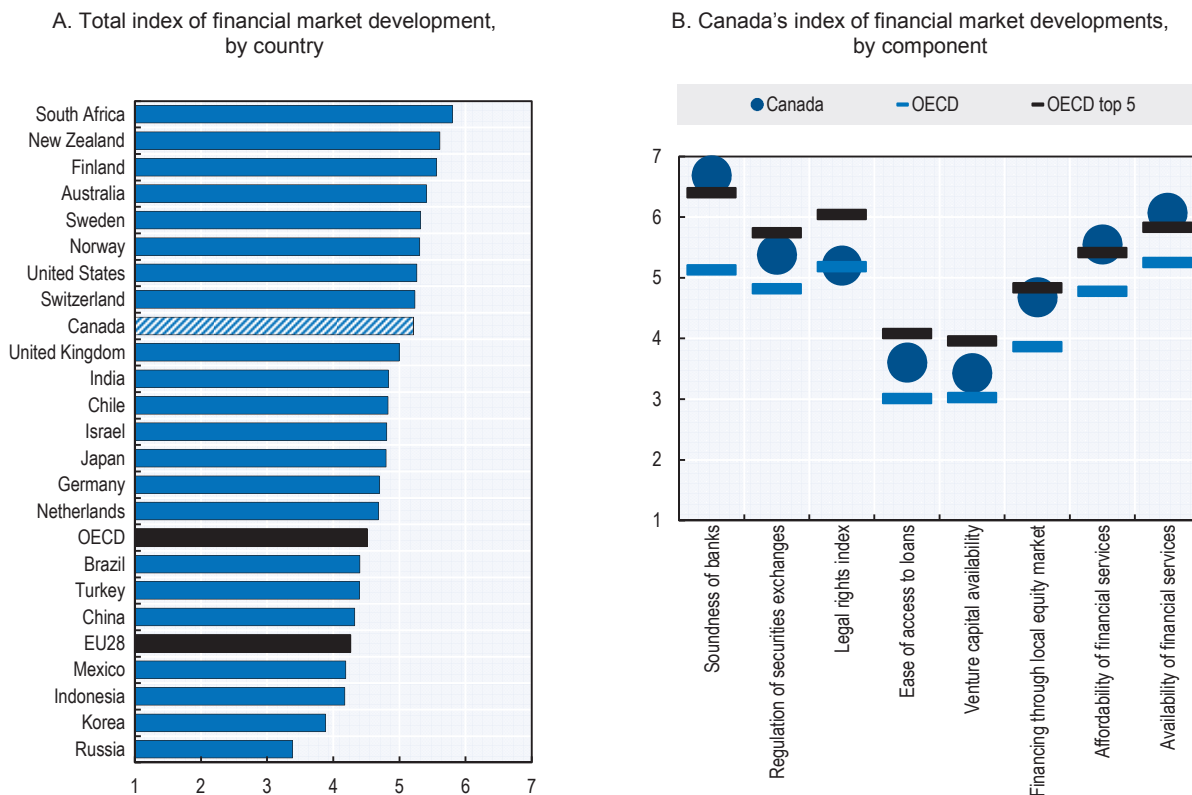
Financial institutions and markets are well developed in Canada, with the size of credit by the banking sector, the market capitalisation of businesses and stocks traded above the OECD median (Figure 4.9). According to the World Economic Forum Global Competitiveness Index, Canada ranks 12<sup>th</sup> in terms of financial market development, with very high scores in terms of bank soundness and availability of financial services, but lower ones in terms of ease of access to loans, financing through local equity market, and venture capital availability (Figure 4.9).

Farm Credit Canada (FCC) is Canada's largest provider of business and financial services to farms and agribusiness (Box 4.3). The Business Development Bank of Canada (BDC), a Crown corporation, fulfils its mandate by providing financing, venture capital and consulting services to entrepreneurs, with a focus on small and medium-sized enterprises (SMEs). The Business Development Program, offered by the Atlantic Canada Opportunities Agency (ACOA), provides support for the start-up and expansion of SMEs across rural Atlantic Canada by offering interest-free loans.

As a result, the food and agriculture sector is generally well served by the banking sector. Key lenders include banks, FCC, credit unions and trust companies. In addition, a few provinces also have provincial crown lenders serving the industry. Some evidence suggests however, that smaller firms in processing sectors, such as in the functional foods and natural health product areas, may have experienced difficulty in acquiring capital for product development activities in the past (Cranfield et al., 2006).

**Figure 4.9. Global Competitiveness Index: Financial market development, 2013-14**

Scale 1 to 7 (best)



Indices for EU28 and OECD are the simple average of member-country indices.

Top 5 refers to the average of the scores for the top 5 performers among OECD countries (New Zealand, Finland, Australia, Sweden and Norway).

The Legal rights index is scored on a scale from 1 to 10 based on calculations by the WEF from the World Bank–International Finance Corporation's Doing Business 2013.

Source: World Economic Forum (2013), *The Global Competitiveness Report 2013-2014: Full data Edition*, Geneva 2013. <http://reports.weforum.org/the-global-competitiveness-report-2013-2014/#>.

StatLink  <http://dx.doi.org/10.1787/888933250298>

The Federal Ministry in charge of agriculture, AAFC, also offers a number of programmes that provide financing or government backstopping for the sector and facilitate access to loans. AAFC agricultural credit programmes include the Canadian Agricultural Loans Act (CALA) Program and the Advance Payments Program (Box 6.3).

Canada's venture capital market as a percentage of GDP is relatively low compared to the United States and several other OECD countries (OECD, 2012, Figure 13). There has been concern that the sector is underserved with respect to venture capital financing compared to other sectors and countries (Van Dusen, 2009). This shortage existed prior to the recession for a variety of reasons:

- Lack of understanding of the opportunities within the agricultural sector by venture capital funds.
- Historically low short-term returns on investment from private investment in agriculture in comparison with sectors such as Information and Communications Technology (ICT) (in contrast with public research, which shows good return on investment in the long run in certain areas).



- Insufficient numbers of successful agri-entrepreneurs investing in the area.
- Length of time for an agri-technology to succeed (break-even) is longer than in ICT.
- Perception that the Canada Food and Inspection Agency (CFIA)’s regulatory process is long and complex for approving new innovations.
- Provincial restrictions on the political boundaries and criteria where public funds can be invested or spent.
- Lack of attraction to programmes or mechanisms needed in order to facilitate foreign investment in Canadian companies.

The total number of venture capital firms in Canada has dropped from a high of 176 firms in 1998 to less than 45 today (Thompson-Reuters; Canadian Venture Capital Association, CVCA). This likely cannot be characterised as a consolidation, but rather a decrease in numbers due to fund performance and market conditions. Investments are cyclical in nature. Investments made by venture capital funds totalled CAD 2.0 billion in 2013, or 31% more than the CAD 1.5 billion invested in 2012, representing the highest level since the peak of the previous cycle in 2007 (CVCA). Venture capital data specifically for the agricultural sector is difficult to obtain, although it is reported that there were a total of 19 different firms investing in agri-related deals in Canada between 2008 and early 2013 (Thompson-Reuters). Many innovations and ventures are peripherally related to agriculture, such as clean tech, green tech, health and bio-economy related. One issue is to better define the areas of investor interest such as crop science, livestock and animal health, bio-industrial products, to name a few.

While angel investor activity has increased marginally, angels are geographically dispersed across great distances (Ottawa, Vancouver, Toronto, Calgary). As such, they rarely co-invest with one another. Canada does not have the necessary critical mass of organised angel activity to have meaningful impact on seed capital investing. Historically, most angel activity is focused on medical and ICT sectors.

#### Box 4.3. Farm Credit Canada

Farm Credit Canada (FCC) is a commercial crown corporation, whose mandate is “advancing the business of agriculture.” It was initially established in 1927 as a long-term mortgage lender to address a perceived lack of credit availability for farmers, notably in Western Canada (Bergevin and Poschman, 2013). Its mandate was broadened in 1959 to include consulting services and its lending rate was set at 5%, well below what was needed at the time to remain profitable, accordingly providing an interest rate subsidy to farmers. Its mandate was expanded further in 2001 when the FCC was allowed to offer a broader range of financial and business management services such as business planning and risk management and to a broader clientele including farm related businesses that are not farmer owned.

Today, the FCC provides specialised and personalised business and financial services to small and medium-sized businesses that are related to farming. It also provides insurance, software, learning programmes and other business services to producers, agribusinesses, such as suppliers and processors, and agri-food operations. The FCC also assists farm businesses with the development of their respective business plans, including future research and development efforts, lists of any patents or intellectual property owned by the farm.

It is financially backed by the Government of Canada and currently provides financing and other services to more than 100 000 primary producers through a chain of 100 primarily rural offices. Its loans receivables stood at CAD 23.2 billion at the end of 2012 fiscal year.

Source: Farm Credit Canada: <http://www.fcc-fac.ca>.

To address the market shortage of venture capital financing for agricultural innovation, FCC established and co-seeded the Avrio Ventures capital fund. The federal government announced a new Venture Capital Action Plan (VCAP) in Budget 2013, although the majority of this fund-of-funds approach<sup>18</sup> is targeting sectors outside of agriculture.

FCC is a limited partner and investor in *Avrio Venture's capital funds*.<sup>19</sup> Avrio's investment premise is to focus on identifying innovative companies in the food and agriculture sector that are meeting global challenges related to health, wellness and sustainability. The fund pursues investments in commercialisation to growth stage companies. In 2011, Farm Credit Canada provided a CAD 50 million commitment to Avrio's new Limited Partnership Fund II. The second closing of this fund has also attracted CAD 40 million in other capital commitments from Export Development Canada, Alberta Investment Management Corporation, Alberta Enterprise Corporation and BDS Investments Inc., bringing the fund total to over CAD 91 million.

There are several other federal efforts to improve commercialisation at the regional/provincial level. For example, the Federal Economic Development Agency for Southern Ontario has a 2:1 matching investor programme. However, these types of programmes are predicated on having an ample supply of investors to whom matching incentives can be provided.

Since its launch in 2001, the Atlantic Innovation Fund (AIF) has been helping Atlantic Canadians compete in a global knowledge-based economy through the development and commercialisation of new ideas, technologies, products and services. In 2013, Western Economic Diversification Canada introduced a five-year CAD 100 million Western Innovation Initiative (WINN) for small- and medium-sized enterprises (SMEs) with operations in Western Canada to move their new and innovative technologies from the later stages of research and development to the marketplace.

In Canada, venture capital represents CAD 15 billion or 18% of the total private equity capitalisation (AAFC, 2014; Van Dusen, 2009). However, agriculture differs greatly in terms of financing methods from other sectors, such as the high-tech sector. Even within agriculture, it is likely that private sector behaviour in financing commercialisation of innovation has different characteristics between farmers, food manufacturing and agricultural biotechnology companies.

## Tax policy

Tax policy affects innovation, productivity and sustainability in many ways: it affects the decision of firms and households to save or invest in physical and human capital, and thus the adoption of innovation; it raises government revenues, which can then finance public services, including those enabling innovation such as education and skills, R&D, and strategic infrastructure; it can also be used to provide direct incentives, for example preferential tax treatment to investments in private R&D or to young innovative companies. In addition to its economy-wide impacts, tax policy influences the conduct, structure and behaviour of farm, input suppliers and food companies.

### *Tax provisions for farmers and agri-food businesses*

In Canada, agriculture and agri-food businesses are subject to a combination of federal and provincial incomes taxes, federal and provincial sales/excise taxes, and provincial/municipal property taxes. Tax rates, exemptions, deductions on agricultural land vary from province to province.

According to OECD data, the average corporate income rate tax in Canada (26%) is close to the OECD median rate (25%) and lower than that in Australia (30%, Brazil (34%) or the United States (39%).

**Income tax rates** paid by farmers vary depending on the way the farm business is organised. Most farms in Canada operate as sole proprietorships or partnerships, which are subject to personal income tax rates. Incorporated farms, on the other hand, pay corporate income taxes. The federal general corporate tax rate has been reduced to 15% in 2012 from over 22% in 2007, and is now much lower than the personal income tax rate (Table 4.1). Further personal income taxes will become payable as

profits are withdrawn from the company and distributed to owners, whether through salaries or dividends. Many farmers incorporate a business to take advantage of the lower small business tax rates. The small business corporation tax rates are generally applicable to the first CAD 400 000 to CAD 500 000 of income, depending on the province.

**Table 4.1. Income tax rates by tax category, 2012**

Tax category	Federal tax	Provincial tax	Top combined marginal rates
Personal	29%	10% to 21%	39% to 50%
Small Business Corporation	11%	0 to 8%	11% to 19%
Corporate (regular)	15%	10%* to 16% <sup>1</sup>	28% to 34%

1. Lower rates of 2.5% (Yukon) and 5% (Newfoundland and Labrador) apply to manufacturing and processing activities.  
Source: Canadian legislation.

There are a number of federal special tax provisions for farmers that can impact or encourage investment in the sector as well as facilitate transfers to the next generation. They include capital gains tax exemptions; mechanisms to defer capital gains over ten years or on the transfer of an eligible farming business to a direct descendant; and provisions to reduce taxable income through cash accounting or deduction of farm losses from other income for part-time farmers up to a maximum (Box 4.4).

#### Box 4.4. Selected federal tax provisions for farmers

**Lifetime Capital Gains Exemption (LCGE):** The income tax system provides an individual with a LCGE on up to CAD 750 000 of capital gains realised on the disposition of qualified property: qualified small business corporation shares, and qualified farm and qualified fishing property. Budget 2013 increased the LCGE on up to CAD 800 000 of capital gains realised by an individual on qualified property, effective for the 2014 taxation year. In addition, the LCGE will be indexed to inflation for taxation years after 2014.

**Deferral of Capital Gains through the Intergenerational Transfer of Family Farms:** The intergenerational transfer allows for a tax deferral on the transfer of an eligible farming business to a direct descendant. This rule permits the taxpayer to elect to transfer the property at any amount between its cost amount and its fair market value at the time of the transfer. The elected amount is deemed to be the cost of the property to the descendant.

**Deferral of Capital Gains through a Ten-Year Capital Gains Reserve:** Farmers are entitled to claim a capital gains reserve over a ten-year period where the proceeds of disposition have not been fully received and the property has been transferred to the farmer's descendant. The reserve allows farmers to average the inclusion of capital gains and the corresponding tax liability over a maximum of ten years. A minimum of 10% of the taxable portion of the gain must be brought into income each year. In the context of transfers of family farm businesses to persons other than a child, the farmer may claim a reserve over a five-year period if the proceeds of disposition are not all receivable in the year of the sale. Under the five-year capital gains reserve, a minimum of 20% of the taxable portion of the gain must be brought into income each year.

**Cash Basis Accounting:** Taxpayers engaged in businesses are generally required to use the accrual method of accounting for tax reporting (i.e. revenues are declared when earned, and expenses claimed when incurred). However, farmers may elect instead to use the cash-basis method of accounting and report farm income when received, and expenses when paid (subject to certain inventory adjustment requirements).

**Restricted Farm Loss Provision for Part-Time Farmers:** If farming (or a combination of farming and some other source) is not the chief source of income and if the farm operations generated a loss, the farm loss the taxpayer can deduct from other income is restricted to a maximum of CAD 8 750. Any loss that is not claimed in a given year due to the restriction can be carried forward 20 years and back three years to deduct against any farm income in those years. Budget 2013 amended the restricted farm loss rules to clarify that a taxpayer's other sources of income must be subordinate to farming in order for farming losses to be fully deductible against income from those other sources. Budget 2013 also increased the RFL limit to CAD 17 500 of deductible farm losses annually (CAD 2 500 plus ½ of the next CAD 30 000).

**The Atlantic Investment Tax Credit (AITC):** AITC is a 10% credit available for certain investments in new buildings, machinery and equipment used in the Atlantic region and the Gaspé Peninsula region of Quebec. Currently, the credit supports investments in farming, fishing, logging, manufacturing and processing, oil and gas, and mining, but this programme is being gradually phased out.

Source: Department of Finance Canada.

Food processors can benefit from a tax provision introduced in 2007, the temporary accelerated Capital Cost Allowance. It allows new investment in machinery and equipment in the manufacturing and processing sector to be depreciated at a faster rate (50% on a straight line basis). By allowing a faster write-off of eligible investments, this measure provides investment support to businesses.

Provincial and municipal governments also offer provisions to farmers, such as discounted land and property taxes and special provincial income tax incentives. For example, the provincial income tax in Manitoba exempts totally small businesses with income under CAD 400 000; Ontario grants the temporary extension of the accelerated Capital Cost Allowance deduction for income tax purposes; reductions in the corporate tax rate have been made in Saskatchewan.

Some provinces have exemptions on farm inputs. For example, in some provinces, “purple” gasoline or diesel is available for farm-use only and is taxed at a different rate than fuel for non-agricultural uses (“purple” referring to the colour marking employed to distinguish it from other fuel).

### *Tax incentives to support R&D*

Both federal and provincial governments use tax incentives to support private investments in R&D. The Scientific Research and Experimental Development (**SR&ED**) **Tax Incentive Program**<sup>20</sup> is the single largest federal programme supporting business R&D in Canada, providing more than CAD 3.6 billion in tax assistance in all sectors of the economy in 2012. Federal tax assistance is supplemented by related provincial credits for R&D, estimated at CAD 1.5 billion in 2011 (OECD, 2012a). Activities eligible for the SR&ED tax incentives involve systematic investigation or search carried out in a field of science or technology by means of experiment or analysis. In general, three broad categories of activity are eligible: basic research, applied research, and experimental development. These tax incentives are available to agricultural corporations and agri-food business.

The SR&ED tax incentive programme has two components:

- An income tax deduction, which allows immediate expensing of all eligible expenditures: salary and wages, materials, overhead, contracts and capital expenditures (other than most buildings).
- An investment tax credit with the following characteristics (until 1 January 2014):
  - The federal general rate is 20%. An enhanced rate of 35% is provided to small and medium-sized Canadian-controlled private corporations on their first CAD 3 million of eligible expenditures.
  - The provincial rate ranges from 10% (e.g. in Alberta and Ontario) to 37.5% in Quebec, with 15%-20% rates in most other provinces.
  - The tax credit is non-refundable; however, unused credits may be carried forward up to 20 years or carried back up to three years. In addition, unused credits earned in a year are generally fully refundable for small and medium-sized Canadian-controlled private corporations on their first CAD 3 million of current expenditures.<sup>21</sup>

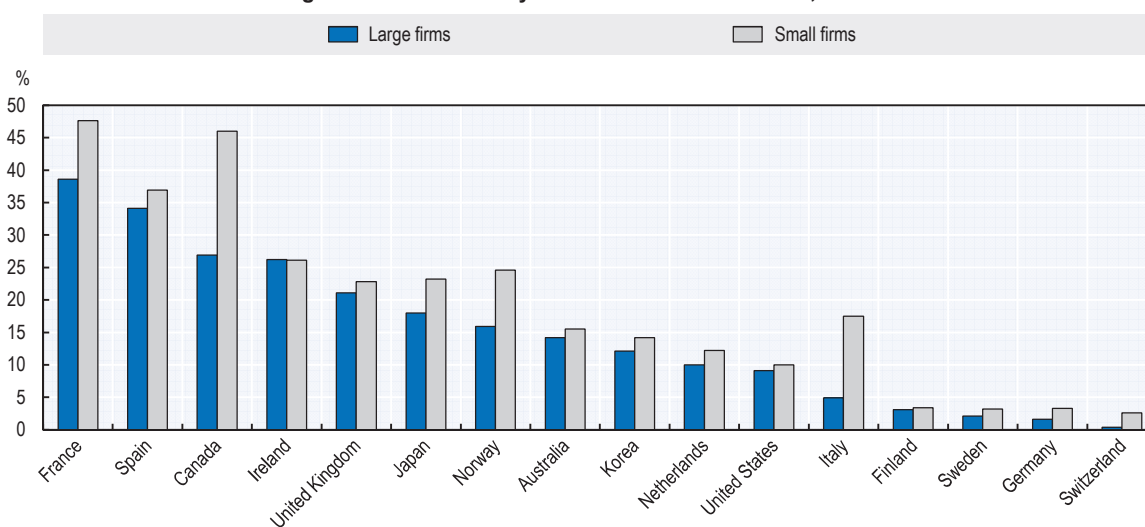
In January 2013, the profit element was removed for arm’s length third-party contracts (i.e. only 80% of an arm’s length contract is now eligible) for the purpose of calculating SR&ED tax credits. From January 2014, major changes were implemented:

- The general SR&ED investment tax credit rate was reduced to 15%, affecting primarily larger enterprises.
- Capital expenditures were removed from the expenditure base.

- The prescribed proxy amount, which taxpayers can use to claim SR&ED overhead expenditures, has been reduced from 65% to 55% of the salaries and wages of employees directly engaged in SR&ED activities in Canada.

The 2012 *OECD Economic Survey of Canada* (OECD, 2012) found that the SR&ED tax credit was one of the most expensive R&D tax expenditures in Canada. This is the second highest among a sample of OECD countries after France (Figure 4.10), whereas direct funding of business innovation is one of the lowest. The high cost of the SR&ED reflects the high rate of subsidisation rather than intensity of business R&D activity. Both the income tax deduction and the investment tax credit provide a significant benefit to firms. The SR&ED credit adds to complexity in the tax code, raising administrative and compliance costs.

Figure 4.10. Tax subsidy rate on investment in R&D<sup>1</sup>, 2009



1. The data include income tax deductions and R&D tax incentives provided by sub-national governments. The element of income tax deductions corresponding to an economic depreciation allowance is not a subsidy and thus not included.

Source: Department of Finance (2009), *Tax Expenditures and Evaluations 2009*, Part 2, “An International Comparison of Tax Assistance for Investment in Research and Development”, Ottawa. <http://www.fin.gc.ca/taxexp-depfisc/2009/taxexp09-eng.asp>.

StatLink  <http://dx.doi.org/10.1787/888933250382>

## Notes

1. At the time of publication, the enforcement of relevant provisions related to food in this act are in the process of being transferred to the Canadian Food Inspection Agency (CFIA) under the *Safe Food for Canadians Act*.
2. Red Tape Reduction Action Plan: <http://www.tbs-sct.gc.ca/rtrap-parfa/rtrapr-rparfa-eng.asp>.
3. For an overview on water governance and regulations, see: <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=87922E3C-1>.
4. Fisheries Act: <http://www.dfo-mpo.gc.ca/habitat/changes-changements/index-eng.htm>.
5. Responsible Protection and Conservation of Canada’s Fisheries: <http://www.dfo-mpo.gc.ca/media/back-fiche/2012/hq-ac12a-eng.htm>.
6. The Cabinet Directive on Regulatory Management (2012) stipulates that Canadian regulators when regulating will: Protect and advance the public interest in health, safety, and security,

- the quality of the environment, and the social and economic well-being of Canadians; Advance the efficiency and effectiveness of regulation by ascertaining that the benefits of regulation justify the costs; Make decisions based on best available evidence; Promote a fair and competitive market economy; Monitor and control the administrative burden; Create accessible, understandable, and responsive regulation; and Require timeliness, policy coherence, and minimal duplication throughout the regulatory process. For more information see: Cabinet Directive on Regulatory Management: <http://www.tbs-sct.gc.ca/rtrap-parfa/cdrm-dcgr/cdrm-dcgrtb-eng.asp>.
7. Standards Council of Canada: <http://www.scc.ca/en/about-scc>.
  8. Incorporation by Reference in Regulations Act: <http://www.parl.gc.ca/LEGISInfo/BillDetails.aspx?Language=E&Mode=1&billId=5756559>.
  9. Parliament of Canada: Legislative Summary of Bill S-2: An Act to amend the Statutory Instruments Act and to make consequential amendments to the Statutory Instruments Regulations [http://www.parl.gc.ca/About/Parliament/LegislativeSummaries/bills\\_ls.asp?source=library\\_p\\_rb&ls=S2&Parl=41&Ses=2&Language=E&Mode=1](http://www.parl.gc.ca/About/Parliament/LegislativeSummaries/bills_ls.asp?source=library_p_rb&ls=S2&Parl=41&Ses=2&Language=E&Mode=1).
  10. Canadian Food Inspection Agency: <http://www.inspection.gc.ca>.
  11. Safe Food for Canadians Act: <http://www.inspection.gc.ca/about-the-cfia/acts-and-regulations/regulatory-initiatives/sfca/overview/eng/1339046165809/1339046230549>.
  12. Multi-Year Regulatory Modernization Plan: <http://www.inspection.gc.ca/about-the-cfia/acts-and-regulations/regulatory-initiatives/consultation/eng/1342405651215/1342405905957>.
  13. DIR2001-02, Guidelines for the Registration of Microbial Pest Control Agents and Products: [http://www.hc-sc.gc.ca/cps-spc/pubs/pest/\\_pol-guide/dir2001-02/index-eng.php](http://www.hc-sc.gc.ca/cps-spc/pubs/pest/_pol-guide/dir2001-02/index-eng.php).
  14. Survey undertaken for the OECD.
  15. The OECD trade facilitation indicators cover the full spectrum of border procedures — Advance Rulings; Appeal Procedures; Co-operation with other countries and between border agencies of the country; Fees and Charges; Formalities regarding automation, documents and procedures; Governance and Impartiality; Information availability; and Involvement of the Trade Community — for 133 countries across income levels, geographical regions and development stages. Updated and more complete information will be available at the end of 2014. For more information, see: <http://www.oecd.org/trade/facilitation/indicators.htm>.
  16. Venture capital is a form of private equity. Returns on venture capital investment stem from a trade sale (sale to, or merger with, another company) or an initial public offering in which the company becomes authorized to sell its stock to the general public on a stock exchange. Venture capital funds will not only provide money but will mentor their investee firms (IO, 2012).
  17. An angel investor is usually an experienced entrepreneur who provides backing to very early-stage businesses or business concepts.
  18. A “funds of funds” portfolio consists of investments in several venture capital funds.
  19. AVRIO venture capital: <http://www.avriocapital.com/>.
  20. Canada Revenue Agency website for the Scientific Research and Experimental Development (SR&ED) Tax Incentive Program: <http://www.cra-arc.gc.ca/txcrdt/sred-rsde>.
  21. Entities other than Canadian-controlled private corporations cannot receive the credit amount as income, but may use the amount to offset taxes owed.

## References

- AAFC (2014), *The Risk Capital Availability to the Canadian Agri-Innovation Sector*, Agriculture and Agri-Food Canada (Report), Ottawa.
- AAFC (2013), *An Overview of the Canadian Agriculture and Agri-Food System 2013*, Agriculture and Agri-Food Canada, available at: <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1331319696826&lang=eng>.
- Bergevin, P and F. Poschmann (2013), “Reining in the Risks: Rethinking the Role of the Crown Financial Corporations in Canada”, C D Howe Institute Commentary No. 372. Available at: <http://www.cdhowe.org>.
- Canada Gazette: <http://www.gazette.gc.ca/index-eng.html>.
- Cabinet Directive on Regulatory Management (and associated guidelines and tools): <http://www.tbs-sct.gc.ca/rtrap-parfa/guides-eng.asp>.
- Carlberg, J.G. (2011), *Ownership of Farmland in Canada: Importance, Current Trends, and Potential Policy Responses*, University of Manitoba, Winnipeg, March.
- Cranfield, J.A.L., D.P.B. Herath, S.J. Henson and D. Sparling (2006), *An Analysis of Financing Innovation and Commercialization in Canada's Functional Food and Nutraceutical Sector*, <https://ideas.repec.org/s/ags/aaea06.html>.
- Department of Foreign Affairs and International Trade (2012), *Overview of Canada's Investment Performance*, Canada's State of Trade: Trade and Investment Update, 2012. Available at: [http://www.international.gc.ca/economist-economiste/performance/state-point/state\\_2012\\_point/2012\\_6.aspx?lang=eng](http://www.international.gc.ca/economist-economiste/performance/state-point/state_2012_point/2012_6.aspx?lang=eng).
- Department of Foreign Affairs and International Trade (2010), *Making Canada the Location of Choice for Businesses: DFAIT's FDI Attraction Strategy*, Invest in Canada Bureau, Ottawa.
- IO (2012), *Sustainable agricultural productivity growth and bridging the gap for small-family farms*, Interagency Report to the Mexican G20 Presidency, with contributions by Bioversity, CGIAR Consortium, FAO, IFAD, IFPRI, IICA, OECD, UNCTAD, Coordination team of UN High Level Task Force on the Food Security Crisis, WFP, World Bank, and WTO, 12 June. Available at: [www.oecd.org/tad/agriculturalpoliciesandsupport/50544691.pdf](http://www.oecd.org/tad/agriculturalpoliciesandsupport/50544691.pdf).
- Miroudot, S., D. Rouzet and F. Spinelli (2013), “Trade Policy Implications of Global Value Chains: Case Studies”, *OECD Trade Policy Papers*, No. 161, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/5k3tpt2f0zs1-en>.
- OECD (2013a), *Agricultural Innovation Systems: A Framework for Analysing the Role of the Government*, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264200593-en>.
- OECD (2013b), *Agricultural Policy Monitoring and Evaluation 2013: OECD Countries and Emerging Economies*, OECD Publishing, Paris. DOI: [http://dx.doi.org/10.1787/agr\\_pol-2013-en](http://dx.doi.org/10.1787/agr_pol-2013-en).
- OECD (2012), *OECD Economic Surveys: Canada 2012*, OECD Publishing, Paris. DOI: [http://dx.doi.org/10.1787/eco\\_surveys-can-2012-en](http://dx.doi.org/10.1787/eco_surveys-can-2012-en).
- OECD (2011), *Economic Policy Reforms: Going for Growth*, OECD publishing, Paris. DOI: <http://dx.doi.org/10.1787/growth-2011-en>.
- OECD (2010), *The OECD Innovation Strategy: Getting a Head Start on Tomorrow*, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264083479-en>.

- OECD (2005), *Taxation and Social Security in Agriculture*, OECD Publishing, Paris.  
DOI: <http://dx.doi.org/10.1787/9789264013650-en>.
- Science and Innovation. Agriculture and Agri-Food Canada: <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1268946647678&lang=eng>.
- Statistics Canada (2012), "Foreign direct Investment, 2012", *The Daily*. Available at: [www.statcan.gc.ca/daily-quotidien/130509/dq130509a-eng.htm](http://www.statcan.gc.ca/daily-quotidien/130509/dq130509a-eng.htm).
- Statistics Canada (2011), *2011 Census of Agriculture*, Farm and Farm Operator Data, Catalogue No. 95-640-XWE.
- Van Dusen, M. (2009), "The National Commercialization Assessment", unpublished paper.
- Veterinary Drugs. International activities. Health Canada: <http://www.hc-sc.gc.ca/dhp-mps/intactivit/veterin/index-eng.php>.
- Vojtech, V. (2010), "Policy Measures Addressing Agri-environmental Issues", *OECD Food, Agriculture and Fisheries Papers*, No. 24, OECD Publishing, Paris.  
DOI: <http://dx.doi.org/10.1787/5kmjrzg08vzb-en>.



## Annex 4.A1

### Procedures to establish, evaluate and communicate standards for purchased inputs, feed and food products

#### Who provides scientific evidence?

Canada considers any scientific evidence that is brought before it. Industry can submit scientific evidence for consideration as part of an application for approval of novel products or processes. During various stakeholder consultations, feedback from industry has indicated that the combination of lengthy Service Delivery Standards and the time required to generate the efficacy data needed to support registration delays the introduction of innovative products into the Canadian marketplace.<sup>1</sup>

AAFC undertakes scientific research, development and technology transfer activities for the benefit of Canadians. AAFC's Pest Management Centre (PMC) undertakes scientific research to support growers' access to new minor use pesticides and reduced risk pest management solutions.<sup>2</sup> Since 2006, 480 regulatory submissions have been made on behalf of Canadian growers, resulting in over 330 registrations and more than 1 230 new uses. A company proposing the registration of an innovative pest control product must also submit the required scientific evidence to the Pest Management Regulatory Agency (PMRA). As with any pesticide, the PMRA reviews the evidence to ensure that the product is acceptable in terms of safety, merit and value before it may be allowed for sale and use in Canada.

Through the public consultations as part of the regulatory development process, any person or company can submit information for consideration by regulators. Canada is working on many fronts to try to better align regulatory requirements with those of other jurisdictions (e.g. Canada-US Regulatory Cooperation Council<sup>3</sup>) to decrease the burden on industry and to facilitate the introduction of safe innovative products to the marketplace.

Canada is also participating in international efforts, such as OECD's Global Joint Review for Pesticides to develop and share scientific data related to pre-market applications. Canada is increasingly exploring similar work-sharing arrangements relating to new products. Similar international regulatory cooperation and knowledge sharing is also being undertaken by Health Canada's Veterinary Drugs Directorate.

For fertilisers and feed, product proponents are required to submit scientific evidence substantiating product safety. For feed products, specific requirements for a safety and efficacy assessment are dependent on the nature of the feed in question. Data requirements are tailored based on history of use and complexity of the product. The Canadian Food and Inspection Agency (CFIA) provides guidance to stakeholders on how to meet the data requirements for the assessment process through workshops, one-on-one consultations and the publication of guidance documents.

#### Who evaluates the scientific evidence?

For fertilisers, safety assessments are conducted by a team of CFIA evaluators, who examine all ingredients in a fertiliser or supplement including the active components, the formulants, carriers, additives, potential contaminants and by-products that might be released into the environment as a result of product's use and application to soil. In addition to evaluating the desired effect of the product as a nutrient or plant growth supplement, the CFIA also examines unintended and potentially adverse effects, including bystander and worker exposure (e.g. retailer, farmer, home owner), safety of food

crops grown on land that has been treated with the product, impacts on animals and plants other than the target crop species, and ecosystem effects including impact on soil, biodiversity, leaching to waterways, etc.

For livestock feeds in Canada, the *Feeds Act* and *Regulations* currently provide authority to the CFIA for pre-sale product evaluation, safety assessment of new ingredients, product registration, and marketplace compliance verification that includes inspection and sampling activities. The current regulatory framework focuses on approval of individual ingredients and registration of mixed feeds, with exemptions for registration or streamlined approval processes for ingredients that are well characterised and have a history of safe use.

### **How often are standards being reviewed?**

**For fertilisers**, safety assessments are conducted on a case by case basis and consider product ingredients, their source, the method of manufacture, quality control and the quality assurance systems in place to ensure that the final product does not contain contaminants at levels that may be harmful to humans, animals, plants and the environment. The CFIA maintains internal safety standards for contaminants (heavy metals, faecal coliforms, salmonella, dioxins and furans, etc.) and also considers standards maintained by other federal and international regulatory bodies. There is no set timeline for standards review. As new information becomes available regarding potential risks, the Fertiliser Program will seek to review (at times in collaboration with other regulatory partners and academia) internal standards.

Standards in domestic disease control are reviewed every one or two years, or when new information (science or industry practices) becomes known.

The *Feeds Regulations* are not prescriptive in terms of data requirements. The specific data requirements for the assessment are contained in policy via current regulatory guidance documents (see following link for current feed regulatory guidance documents.<sup>4</sup> Information requirements outlined in these documents allow data needs to be addressed by either empirical methods or valid scientific rationale. The use of peer-reviewed scientific literature or foreign data, where appropriate is also be permitted. The current documents are updated and new documents are created as needed.

### **Assistance to navigate the regulatory system**

AAFC helps the sector adapt to a changing domestic regulatory environment through engagement and collaboration with industry and regulatory agencies.

In general, government departments and agencies have many online tools to help stakeholders in the agriculture sector navigate the regulatory system, including manuals, compliance examples/models, guidance documents, information, links to related websites/partners and contact names for further direction.

The CFIA worked closely with Canadian General Standards Board and the private sector to create the national standard for organic production and the related Organic Products Regulations. By involving industry to such as a high degree (i.e. stakeholders drove the development of the national organic standard), industry is very knowledgeable about the organic regulatory system.

The PMRA publishes guidance documents on its web site to aid stakeholders in navigating the pesticide regulatory system. In addition, the PMRA offers a pre-submission consultation service at no cost to provide regulatory advice to registrants or applicants prior to the submission of an application to register or amend a pest control product. The pre-submission process may offer advice on study protocols or the data required to support a registration of a particular pest control product. Furthermore, the PMRA operates a toll-free pest management information service to respond to stakeholder queries and comments.

There are also electronic navigation tools in place that help businesses find information about business permits (BizPal) and agricultural programmes and services (AgPal). These federally-led tools endeavour to capture information from all three levels of government (municipal, provincial and federal).

Canada has initiated the Open Government initiative, which aims to increase information sharing as well as stakeholder engagement. In addition to the ‘Open Data’ and ‘Open Information’ streams, the ‘Open Dialogue’ stream of the initiative includes increasing stakeholder input into regulations and is linked to the Red Tape Reduction Action Plan. In 2013, as part of this action plan, the Government of Canada initiated the online posting of the forward regulatory plans for all federal departments and agencies. This provides consumers, industry and other interested stakeholders greater opportunity to participate in the development of regulations (re: transparency) and to better plan for the future (re: predictability).

### Setting standards, evaluation and communication

It is the Government of Canada’s role to communicate with the public in a timely and clear manner with information that is accurate, objective and complete about its policies, programmes, services and initiatives to help build public confidence in the regulatory system as well as the safety of approved innovative practices and products.

- The Communications Policy of the Government of Canada prescribes communications activities by institutions, ensuring that communications across the government are well-coordinated, effectively managed and responsive to the diverse information needs of the public.

The government’s approach is to safeguard and protect the environment, public health and safety, and animal and plant health through science-based assessments. Once safety is assessed, market decisions are left to industry and to the consumer. It communicates this approach through print public education materials, website FAQ (Frequently Asked Questions), and press releases.

- Example: Health Canada webpage information on Genetically Modified food from the standpoint of the Canadian economy and safety.

For AAFC, this includes a broad communications campaign around Growing Forward 2 (2013-2018) Canada’s current agricultural policy framework focused on innovation, competitiveness and market development. Communications activities to support the launch of GF2 focused on innovation as a key driver to long term prosperity in the agricultural sector and the Canadian economy.

- AAFC communications activities on Growing Forward 2 included a broad sector engagement strategy to obtain stakeholder input into the development (in-person meetings and online discussions with various stakeholders and interested parties from across the country). Federal, provincial and territorial governments engaged industry and the public at various stages.
- Upon reaching an agreement, AAFC communications activities included: a direct mail piece to all Canadian farm households to raise awareness of the new programmes; advertising in specialty media in each province and in both official languages; Ministerial events across the country to announce bilateral agreements with provinces and territories; news releases to promote programmes and mark important milestones and application dates; as well as multiple new postings to the AAFC website.

The federal government also promotes research and innovation initiatives specifically through websites and a science portal. The results of AAFC research are regularly published in peer-reviewed journals, communicated to stakeholders, shared with international research partners and promoted to media and to Canadians through a variety of communications channels including media events to announce investments in science and technology, new discoveries and partnerships; proactive media outreach that includes pitching success stories about scientific achievements and innovation

milestones; participation by scientists in events that highlight their work such as Open Houses and Field Days; corporate and regional exhibits; videos such as “Check Out Agriculture” showing how AAFC research goes into everyday grocery items; print material such as fact sheets and newsletters; AAFC website with over 4000 scientific abstracts and profiles of our scientists; and collaboration with other science-based government departments and intergovernmental communities such as Science and Technology Cluster.

It is important the government be involved in communicating the existence of new standards, and clarifies where further information can be obtained. For example, before national organic standards were enacted, “organic” or “certified organic” labels were open to interpretation by consumers. The introduction of the Organic Products Regulations has somewhat alleviated this concern; however, recent polls suggest there is still work to be done, as words such as “natural” continue to confuse consumers, and blur with the regulated term “organic”.

The Pest Management Regulatory Agency uses its Annual Report to Parliament to emphasise that innovative pesticides (such as microbial pest control agents) must meet the same stringent standards as other pesticides registered in Canada. Products which pose unacceptable risks to human health or the environment are not registered for sale or use in Canada.

The CFIA communicates its standards and risk assessment processes to stakeholders, regulated parties, and Canadians using a variety of tools and approaches:

- Information is made available on the CFIA’s website.
- A ListServe tool is available where interested individuals may subscribe to CIFA notification services for topics of interest.
- The CFIA technical representatives and senior managers attend stakeholder organisation meetings and workshops and share relevant information.
- When introducing new standards into regulation, the CFIA conducts consultation sessions with regulated parties and industry stakeholder organisations and in preparing to introduce standards through regulation or legislation publishes information in the Canada Gazette.
- On-line tools are available to regulated parties (e.g. Automated Import Retrieval System (AIRS), which provides regulated parties with information on the standards or requirements for importing regulated products into Canada.

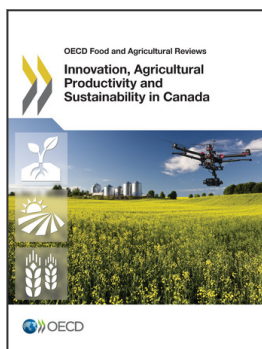
On CFIA’s website, information is available about risk assessments and how information is used in decision-making. From a plant perspective, the CFIA conducts risk assessments for livestock feed and environmental safety, while Health Canada conducts a food safety risk assessment. CFIA scientists conduct risk assessments of diseases and pests that have been, or could be, introduced into Canada and threaten its plants and animals. CFIA works closely with federal and provincial partners to share expertise, and collaborate with the international community for intelligence sharing, to identify risks posed by foreign plant and animal diseases and pests.

### Notes

1. Proposal for Provisional Registrations under the *Fertilizers Act*. Canadian Food Inspection Agency. 2011. <http://www.inspection.gc.ca/plants/fertilisers/registration-requirements/provisional-registrations/eng/1330934645843/1330934850861> (accessed on May 8, 2013).

2. Pest Management Centre. Agriculture and Agri-Food Canada - <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1176486531148&lang=eng>.
3. <http://actionplan.gc.ca/en/page/rcc-ccr/regulatory-cooperation-council>.
4. <http://www.inspection.gc.ca/animals/feeds/regulatory-guidance/eng/1299871623634/1320602307623>).





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