



Agriculture and  
Agri-Food Canada

Agriculture et  
Agroalimentaire Canada



**REPORT:**  
**Evaluation of Grants to Foreign  
Recipients for Participation in  
International Organizations  
Supporting Agriculture**

Office of Audit and Evaluation

The AAFC Evaluation Committee recommended this evaluation report for approval by the Deputy Minister on March 3, 2015.

Evaluation of Grants to Foreign Recipients for Participation in International Organizations Supporting Agriculture

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## ACRONYMS

AAFC	Agriculture and Agri-Food Canada
BRIC	Brazil, Russia, India, China
CABI	CAB International
CAD	Canadian Dollar
CFIA	Canadian Food Inspection Agency
CIGI	Canadian International Grains Institute
CRP	Cooperative Research Programme on Biological Resource Management for Sustainable Agriculture
DFATD	Department of Foreign Affairs, Trade and Development Canada
DG	Director General
EU	European Union
FAA	Financial Administration Act
FAO	Food and Agriculture Organization of the United Nations
FPT	Federal/provincial/territorial
FTE	Full-Time-Equivalents
GATT	General Agreement on Tariffs and Trade
GBIF	Global Biodiversity Information Facility
GF2	Growing Forward 2
GIFSA	Global Initiative for Food-related Scientific Advice
GM	Genetically Modified
GTA	Grains Trade Agreement
IATRC	International Agricultural Trade Research Consortium
ICRISAT	International Crop Research Institute for the Semi-Arid Tropics
IGC	International Grains Council
IICA	Inter-American Institute for Cooperation on Agriculture
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
LLP	Low Level Presence
MISB	Market and Industry Services Branch
MLS	Multi-Lateral System
MRL	Maximum Residue Limits
OECD	Organisation for Economic Co-operation and Development
OIE	World Organisation for Animal Health
PB	Programs Branch
PGRC	Plant Gene Resources of Canada
PGRFA	Plant Genetic Resources for Food and Agriculture
R&D	Research and Development
RAD	Research and Analysis Directorate
RB	Research Branch
S&T	Science and Technology
SPB	Strategic Policy Branch
STB	Science and Technology Branch
STI	Science Technology and innovation
Ts&Cs	Terms and Conditions
UK	United Kingdom
UN	United Nations
USA	United States of America

WI	Wheat Initiative
WTO	World Trade Organization

## **EXECUTIVE SUMMARY**

This evaluation examines the relevance and performance of Agriculture and Agri-food Canada's (AAFC) Grants to Foreign Recipients for Participation in International Organizations Supporting Agriculture program (from hereafter referred to as the "Grant Program").

The Grant Program supports AAFC's voluntary participation in international organizations that further Canada's international priorities and commitments related to agriculture and agri-food. The Grant Program is allocated a total annual Vote 10 funding of \$883,000 to support long-term payments and short-term payments to foreign recipients.

### **Key Findings**

There is a continued need for Canada to participate in international fora in order to keep abreast of, and remain involved in, international developments in the area of agriculture and agri-food. This role is becoming more relevant, given the increased focus the Federal Government is putting on international trade and cooperation.

The Grant Program is well aligned with government and departmental priorities and AAFC's International Strategy. AAFC's Strategic Direction in science and technology (S&T) is supported by AAFC's membership in the science-based international organizations. The Grant Program supports AAFC's International Strategy by providing the sector with access to global resources and knowledge and a platform for relationship building with key countries.

AAFC is the appropriate department to represent Canada's agriculture and agri-food sector in international fora. In the case of the Cooperative Research Project (CRP), AAFC and the Canadian Food Inspection Agency (CFIA) jointly share the responsibility of representing Canada.

While there were no Full-Time-Employees (FTEs) officially allocated to the Grant Program, notionally, less than five FTEs were involved in implementing the program. AAFC's collaborations with the six international organizations contributed to the achievement of expected results.

Overall, the Grant Program provided value to the sector. In particular, AAFC's collaboration with CAB International (CABI)<sup>1</sup>, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Wheat Initiative (WI), the Cooperative Research Programme (CRP) and the International Grains Council (IGC) were of notable value and resonated with the long-term needs of Canada's agriculture and agri-food sector.

While the Grant Program continues to benefit the sector in addressing challenges, there are potentially additional organizations that could be of value to the sector.

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<sup>1</sup> In 1981 the organization was constituted the Commonwealth Agricultural Bureau. In 1988, the UN established an agreement that renamed the organization CAB International.

## 1.0 INTRODUCTION

### 1.1 PURPOSE OF REPORT

The *Financial Administration Act (FAA)* requires all grant and contribution programs to be evaluated once every five years. In accordance with this requirement, this evaluation was conducted as part of AAFC's five-year Departmental Evaluation Plan (2014/15 to 2018/19). The evaluation was conducted by AAFC's Office of Audit and Evaluation.

### 1.2 EVALUATION SCOPE AND METHODOLOGY

#### 1.2.1 Scope

The evaluation assessed the relevance and performance of the Grants to Foreign Recipients for Participation in International Organizations Supporting Agriculture program (from hereafter referred to as the "Grant Program") as required by Treasury Board's *Policy, Directives and Standards on Evaluation*. The evaluation covers the period from April 1, 2010 to March 31, 2014.

The Grant Program provides long-term payments and short-term payments to foreign recipients. This evaluation focuses on the six international organizations that received long-term payments between April 1, 2010 and March 31, 2014 (Annex A provides a profile of the six international organizations).

#### 1.2.2 Data Collection Methods

The following lines of evidence were used to address the evaluation questions:

- *Document Review:* AAFC documents were reviewed to determine the objectives and expected results of the Grant Program, and to gain an insight into the nature of activities that AAFC undertook. This included a review of documents relating to the six international organizations that received long-term payments.
- *File Review:* A review was conducted of the Grant Program's financial information and the process by which funding was approved for international payments.
- *Literature Review:* A literature review was conducted of the six international organizations. This review provided information on the history, current status, membership, 'raison d'être', activities and outcomes of the organizations. Sources for the review included: websites, academic papers, annual reports and proceedings of committee meetings.
- *Interviews:* A total of eight interviews were conducted with AAFC officials. The interviews offered perspectives on the relevance and performance of the Grant Program and an in-depth understanding of AAFC activities and achievements.



### 1.3 EVALUATION LIMITATIONS

Approaches were put in place to mitigate the constraints brought about by the evaluation limitations, as follows:

- AAFC has been a member of one organization for less than two years. In this case it was difficult to determine the extent to which AAFC's activities with the organization contributed to the expected results of the Grant Program as collaborative projects had not been completed. In this situation, the evaluation assessed the extent to which activities aligned with federal government priorities and their potential for achieving results.
- A Performance Measurement Strategy was not developed for the Grant Program. This was because AAFC's membership in each international organization contributed to the outcomes of the organization, and results were reported through each organization's established governance structure. The absence of a Performance Measurement Strategy made it difficult to assess performance against outcomes. As a result, the evaluation assessed performance against the expected results outlined in the Grant Program's Terms and Conditions (Ts&Cs).
- Interviews were not conducted with representatives of the international organizations or users of scientific knowledge outside of AAFC. In order to obtain a perspective on the relevance and performance of the Grant Program, an extensive literature review was conducted and additional, more probing, questions were included in interviews with AAFC officials.

## 2.0 PROGRAM PROFILE

### 2.1 CONTEXT

Canada is a member of major international organizations such as the United Nations (UN) and the Organisation for Economic Co-operation and Development (OECD). National membership in these organizations is usually secured through transfer payments provided by the Department of Foreign Affairs, Trade and Development Canada (DFATD). These payments are known as ‘assessed contributions’ and require an Act of Parliament, a Cabinet decision, an Order in Council or an international treaty.

In addition to these memberships, the international organizations may seek additional funding from member countries to participate in specialized bodies, agencies or initiatives. Participation in these specialized activities is optional and member countries are required to provide funding in addition to their country’s (national) membership payments. This additional funding is a voluntary payment<sup>2</sup> and covers a country’s voluntary participation in international activities. It is not part of a country’s ‘assessed contribution’. Voluntary payments are usually funded by individual departments as they offer them the opportunity to participate in international initiatives that support their mandate.

AAFC maintains, on behalf of Canada, voluntary payments to various foreign recipients for participation in international activities related to agriculture and agri-food. Payments to these foreign recipients are funded through AAFC’s Grant to Foreign Recipients for Participation in International Organizations Supporting Agriculture program (from hereafter referred to as the “Grant Program”).

### 2.2 OVERVIEW OF PROGRAM

The Grant Program is a Vote 10 program which supports AAFC’s voluntary participation in international organizations that further Canada’s international priorities and commitments related to agriculture and agri-food.

AAFC’s participation in international organizations is long standing and the Grant Program has been, for the most part, science and research focused. Its objective is to ensure that Canada maintains a presence in international fora in order to provide development opportunities, enhance international cooperation, facilitate the exchange of information among member countries, find solutions to common problems and influence policy development of other member countries. Participation also allows AAFC to leverage resources and expertise that complement the ongoing work of the department.

Funding through AAFC’s Grant Program is either long-term or short-term. Long-term payments denote AAFC’s expenditures towards voluntary membership in international organizations. These payments can continue until AAFC chooses to withdraw membership. Short-term payments denote AAFC’s expenditures to international

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<sup>2</sup> Treasury Board *Directive on Transfer Payments* describes voluntary payments to foreign recipients as “transfer payment, other than assessed contributions, to foreign recipients”.

organizations for participation in specific activities (such as projects or conferences) with a finite timeframe.

The international organizations that received long-term payments through AAFC's Grant Program between April 1, 2010 and March 31, 2014 were (see Table 2 for details):

- Cooperative Research Programme on Biological Resource Management for Sustainable Agriculture (CRP)
- International Agricultural Trade Research Consortium (IATRC)
- CAB International (CABI)
- International Grains Council (IGC)
- International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)
- International Research Initiative For Wheat Improvement - Wheat Initiative (WI)

The international organizations that received short-term payments through AAFC's Grant Program between April 1, 2010 and March 31, 2014 were (see Table 2 for details):

- Inter-American Institute for Cooperation on Agriculture (IICA) - Enabling Developing Country Participation in Codex
- Global Initiative for Food-related Scientific Advice (GIFSA)
- Study on Agri-Food and 'Ominc Technologies' - OECD Working party on Biotechnology
- Food and Agriculture Organization (FAO) conference on Low Level Presence
- Second stage of FAO Biotechnology Initiative
- Food Control Assessment Tool (FAO) to build countries' capacities to import food and adopt science – based approaches to food control
- Risk Based Imported Food Control (FAO), which prepared a manual of technical guidance on risk-based imported food control programs, and their operations

Short-term payments within this period, in general, supported projects that addressed trade access issues for the sector or Canada's position on international standards. This report does not provide an evaluation of these short-term payments.

## **2.3 PROGRAM DELIVERY**

AAFC's membership in international organizations originated as a series of individually administered payments. As part of the departmental transformation in 2012, Programs Branch (PB) was assigned the responsible of administering all Departmental Vote 10 funds.

Prior to 2010, membership payments to science-based international organizations were managed by the former Research Branch (RB) (now the Science and Technology Branch). In 2010, RB brought all payments under one program by establishing the Grants to Foreign Recipients for Participation in International Organizations supporting Agriculture program. This process reaffirmed the Grant Program's ongoing Vote 10 annual funding and established its Ts&Cs.

Following the implementation of the Grant Program in 2010, its scope was broadened to include memberships in international organization that conducted economic research. In 2010, membership payment to the IATRC, which was previously funded through Vote 1, was brought under the Grant Program. In 2012/13, AAFC's membership payment to the IGC was temporarily funded through the Grant Program by amending the Ts&Cs. The Ts&Cs were amended again in 2013/14 to remove the IGC and replace it with the WI.<sup>3</sup>

Initially, membership payments were the responsibility of the branches that were directly liaising with the organizations. This changed in 2012 when the administration of all Vote 10 funds was consolidated under Programs Branch (PB), as part of the departmental transformation. Liaison activities, however, remained within the branches of expertise. This consolidation allowed PB to streamline the approval process for payments under the Grant Program and establish a Director General (DG) level committee responsible for reviewing and recommending AAFC's payments to international organizations for the upcoming fiscal year. All payments through the Grant Program are approved by the Minister of AAFC.

The PB is now responsible for administering AAFC's payments to international organizations on behalf of AAFC. The liaison officer for each international organization is responsible for carrying out duties as they pertain to AAFC's membership. This may include attending meetings, engaging other departmental officials in projects and providing AAFC senior management with necessary briefings.

## **2.4 PROGRAM RESOURCES**

AAFC's Grant Program is allocated an ongoing annual Vote 10 funding of \$673,000 to support transfer payments to international organizations. In 2013/14 the Grant Program received an additional annual Vote 10 funding of \$210,000 for five years from Growing Forward 2 (GF2). This additional funding complements the purpose and objectives outlined in the Grant Program's Ts&Cs, putting greater emphasis on Canada's participation in international standard-setting bodies and multilateral institutions in order to promote science-based rules that could reduce barriers to international trade.

The following tables provides a breakdown of ongoing and GF2 funding under the Grant Program (Table 1) and the international organizations that received long-term and short-term payments (Table 2)

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<sup>3</sup> The Ts&Cs were amended to allow payments to the Institute national de la Recherche Agronomique (INRA), which is a public research agency of the government of France, and acts as the managing institution for the International Research Initiative for Wheat Improvement (the WI).

**Table 1: Financial resources allocated to AAFC's Grant Program, in CAD, From fiscal years 2010/11 to 2013/14**

Type of Funding	2010-2011	2011-2012	2012-2013	2013-2014
Vote 10 Grant Funding On-going	673,000	673,000	673,000	673,000
Vote 10 Grant Funding GF2	zero	zero	zero	210,000
Vote 10 Supplementary Estimates	zero	zero	600,000	zero
<b>Total</b>	<b>673,000</b>	<b>673,000</b>	<b>1,273,000</b>	<b>883,000</b>

Source: Corporate Management Branch, AAFC

**Table 2: AAFC long-term and short-term payments to international organizations, in CAD, through the Grant Program from 2010/11 to 2013/14**

Long-term Payments	International Organization	2010-2011	2011-2012	2012-2013	2013-2014
	CRP	43,613	2,001*	45,145	54,011
	IATRC	25,000	25,000	25,000	zero
	CABI	180,815**	136,185**	317,000	317,000
	IGC	zero	zero	260,233	zero
	ITPGRFA	102,420	125,204	138,927	123,718
	WI	zero	zero	zero	13,948
Short-term Payments	IICA	zero	56,000	185,000	75,000
	GIFSA	zero	zero	zero	90,000
	OMINIC (OECD)	zero	zero	zero	25,000
	FAO (Conf on Low Level Presence)	zero	zero	164,000	zero
	FAO (payment constitutes three projects)	zero	310,000***	zero	zero
	<b>Total</b>	<b>351,848</b>	<b>654,390</b>	<b>1,135,305</b>	<b>698,677</b>

Source: Corporate Management Branch, AAFC

\* Based on a review of earlier documents, AAFC made two payments in FY 2009-10. As a result, AAFC had a credit that was carried over to 2011/12. So payment in 2011/12 was only \$2,001

\*\* Denotes two payments to CABI for voluntary membership in 2011.

\*\*\*Funding constitutes payments to the FAO for AAFC's participation in the (1) Second stage of FAO Biotechnology Initiative, (2) Food Control Assessment Tool and (3) Manual on Risk Based Imported Food Control.

## 3.0 EVALUATION FINDINGS

### 3.1 RELEVANCE

#### 3.1.1 CONTINUED NEED FOR PROGRAM

The evaluation assessed the extent to which the long-term payments through the Grant Program continue to address a demonstrable need for the sector and Canadians.

The international focus of Canada's agriculture and agri-food sector makes export opportunities critical to its long-term growth and prosperity. In 2013, Canada was the sixth largest exporter and sixth largest importer of agriculture and agri-food products. The sector provides one in eight jobs in Canada and accounts for 8.0% of total GDP<sup>4</sup>.

The Federal Government recognises the unequivocal link between economic growth and innovation - that economic growth and the creation of jobs depends on the creation of new markets and improved market access, and that fostering innovation and the development of new technologies supports market access and the establishment of new markets. Canada's prosperity as a trading nation depends on markets for Canadian goods, services and investments. The Federal Government's October 2013 Speech from the Throne committed to promoting Canada's traditional industries, including agriculture, by developing new markets around the world for Canadian products<sup>5</sup>.

Science, technology and innovation are some of the main drivers in the growth of markets. The reduction of tariff and non-tariff barriers and the liberalization of capital markets can open up new opportunities for trade and international investments, expand opportunities for innovators and, in turn, facilitate the spread of knowledge, technologies and innovative business practices. Increasingly, knowledge is becoming more widely distributed around the world while countries are facing similar science-based challenges. Consequently, countries are recognising that working with other countries can offer benefits, such as sharing knowledge and more effectively addressing global challenges, and are putting more emphasis on international collaborations<sup>6</sup>.

International collaborations allow Canada to benefit from discoveries abroad and stay at the forefront of knowledge. This is becoming increasingly necessary in the face of growing competition from emerging economies, such as China and India. In addition, multilateral institutions enable Canadian officials to promote and defend trade and science and research interests in a more efficient manner and at a lower cost than pursuing the issues bilaterally. Finally, the availability of fewer resources for agricultural Research and Development (R&D) in the current economic climate is making it even more important to access resources not available in Canada. AAFC key informants considered the access to resources not available in Canada as one of the most significant benefits of collaborating with international organizations. The key informants reported that the cost alone of

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<sup>4</sup> Agriculture and Agri-Food Canada. *An Overview of the Canadian Agriculture and Agri-Food System. 2013*

<sup>5</sup> PCO. *Speech from the Throne* (June 2011 & October 2013)

<sup>6</sup> Science Technology and Innovation Council. *State of the Nation. Canada's Science, Technology and innovation System: Aspiring to Global Leadership. 2012*

replicating similar resources within Canada would outweigh the current cost of memberships.

The value multilateral organizations bring to a country is articulated by D.Stone<sup>7</sup>, who considers such fora as vehicles for consensus building - that successful international policy development requires an exchange of ideas and the convergence of viewpoints between countries, which does not often take place bilaterally but in networks. These networks help nurture an 'international policy culture' that enables a merging of ideas and the recognition of common problems. Multilateral organizations also offer a platform for a 'soft' form of knowledge transfer where participating nations can build a common understanding of issues and learn from one another, allowing for more informed decision making domestically and internationally.

The federal government continues to encourage international S&T collaborations through support for multilateral collaborative research projects, international S&T missions and outreach activities. This is consistent with the goals of the Grant Program which aims to foster international cooperation, information sharing and seeking solutions to common science-based issues.

### ***3.1.2 ALIGNMENT WITH GOVERNMENT PRIORITIES***

The evaluation assessed the linkages between program objectives and government priorities and the extent to which AAFC collaboration with the six international organizations aligned with AAFC's Strategic Outcomes (SO), AAFC's Strategic Direction in S&T and AAFC's International Strategy.

The six international organizations funded through the Grant Program each have distinct mandates and roles and their contributions to AAFC priorities are unique. CABI, CRP, ITPGRFA and WI conduct science-based activities while the IGC and the IATRC are economic-based.

#### **Alignment with government priorities, AAFC's Strategic Outcomes and AAFC's Strategic Direction in S&T**

The Federal Government has articulated a number of priority areas for investment through its consecutive budgets of 2011 to 2014. While some priorities areas have varied over the years, others have remained a continued focus. Of particular relevance to the agriculture and agri-food sector are Fostering Job Creation, Innovation and Trade, and, Improving Economic Conditions for Farmers. Canada's trade focused economy relies on access to fast growing export markets around the world for job creation and growth, many of which are augmented by research and innovation. By way of federal/provincial/territorial (FPT) agricultural policy frameworks, the federal government has made it a priority to improve the economic conditions for farmers by developing policies and programs that support an innovative, market-orientated sector. The Grant Program's objectives are consistent with these goals as its intent is to promote Canada's international agenda by providing

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<sup>7</sup> D.Stone. Journal of European Public Policy, 2007. Transfer agents and global networks in the 'transnationalization' of policy. Pages 545 – 550.

opportunities to influence policy decisions in international fora and enhance international cooperation<sup>8</sup>.

AAFC's 2014/15 Strategic Outcomes are to achieve a sector that is innovative and sustainable, and, competitive and market oriented. To realise an innovative and sustainable sector, AAFC supports long term core research and development that will improve the understanding of the resource base upon which agriculture depends and the threats to agriculture production. To realise a competitive and market oriented sector, AAFC's goal is to provide information that helps position Canada's industry to capitalize on market opportunities both at home and abroad<sup>9</sup>.

In 2013, AAFC established a Strategic Direction in S&T to support the sector's economic prosperity by: (1) Providing science that enhances the sector's resiliency, (2) Fostering new areas of opportunity, and (3) Supporting competitiveness. Strategic objectives of the strategy define four areas of focus for AAFC science and nine sector strategies define AAFC's science priorities<sup>10</sup>.

AAFC's Strategic Outcomes and Strategic Direction in S&T are supported by the Grant Program as follows:

- AAFC collaborates with CABI to develop bio-control systems for agricultural crops. This research supports the sector by improving the understanding of, and addressing, threats to agriculture brought about by pests and invasive species.
- Canadian scientists are participating in the WI's Wheat Genome Sequencing Consortium. Information generated from this project has the potential of supporting AAFC goals to increase the genetic yield and health benefits of wheat. The results of this project also have the potential of contributing to the other strategic objectives of AAFC's S&T Strategic Direction, such as enhancing environmental performance, improving attributes for food and addressing threats to the value chain.
- The ITPGRFA covers all such genetic resources and facilitates access to the plant germplasm of crops that make up 80 percent of all human consumption. Access to plant germplasm gives Canada the ability to continually develop new plant cultivars that can resist pests, diseases and environmental stresses. It also offers the opportunity to develop new varieties that can open up new markets for the sector.
- Membership in the IGC gives Canada access to information and data that supports market forecasting for domestic and international markets. The users of IGC information include provinces, market analysis groups, crop insurance analysts and farm income groups.
- From 2010 to 2013, the IATRC organized activities in venues around the world on issues of importance to the international agricultural trade policy community. This information and knowledge sharing will help guide trade negotiations and support global market access issues such as, the proliferation of regional trade agreements,

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<sup>8</sup> Government of Canada. *Budget (2011, 2012 & 2014)*

<sup>9</sup> Agriculture and Agri-Food Canada. *2014-15 - Report on Plans and Priorities*

<sup>10</sup> Agriculture and Agri-Food Canada. *Overview of Science and Technology Branch Sector Science Strategies. August 2014*



the impact of price volatility on producers, the gain in productivity from trade and Trans Pacific Partnership issues.

- From 2010 to 2013, the CRP funded seven Canadian-led conferences, of which, four were led by AAFC scientists and two by scientists from the Canadian Food Inspection Agency (CFIA). AAFC-led conferences addressed preservation of animal genetics for food, meat science and technology and new plant-based vaccine technology platforms as an alternative to antibiotics. CFIA-led conferences both related to food safety, addressing veterinary drug and pesticide residues in food and the risk of trichinella in Pork. In addition, Canadian scientists participated in CRP conferences held in other member countries and received support to conduct collaborative science projects in other countries. From this respect, CRP funded activities align with AAFC priorities. They also align with CFIA's priority for a safe and accessible food supply.

The GF2 policy framework recognises the link between long-term profitability of the sector, improved market access and the removal of trade barriers. The Grant Program was allocated additional funding through GF2 to support activities related to international advocacy strategies that would reduce barriers to trade through the promotion of science-based rules. AAFC's participation in the GIFSA addressed barriers to trade as they relate to food safety.

In 2012, the administration of all AAFC Vote 10 funds was consolidated into PB, allowing PB to establish a more formal review process for the Grant Program. While this has improved the administration of the Grant Program, key informants indicated that linkages with AAFC's policy community remain informal and that improving communications within the Department, on the benefits and achievements of international collaborations, could better support policy development activities.

#### Alignment with AAFC's International Strategy

AAFC's International Strategy aims to advance the competitiveness of the sector by: (1) Maintaining and expanding trade and market access opportunities, (2) Connecting the sector to global resources and knowledge, and (3) Cooperating internationally to build relationships and influence others in advancing objectives. The Grant Program is aligned with these objectives as membership in the six international organizations provides Canada a platform to discuss and work with other countries on issues of mutual importance.

The Grant Program is well aligned with government and departmental priorities and AAFC's International Strategy. CRP activities also support CFIA's priority for a safe and accessible food supply. AAFC's Strategic Direction in S&T is supported by AAFC's collaboration with CABI, ITPGRFA, WI and CRP.

The evaluation found that the six International organizations align with government and departmental priorities. At the same time there are other international organizations which could potentially contribute to the objectives of the Grant Program, such as the Global

Biodiversity Information Facility (GBIF)<sup>11</sup> and the OECD Global Science Forum, Temp-Ag Collaborative Research Network<sup>12</sup>, as examples.

Table 3 provides a summary of the international organizations and the extent to which AAFC's activities with the organizations align with AAFC's Strategic Outcomes and strategies.

**Table 3: Summary of the international organizations that received long-term payments from 2010/11 to 2013/14, and, the extent to which activities aligned with AAFC's priorities and strategies.**

International organizations and year established	Raison d'être /Activities	Year AAFC became member	Degree to which activities align with AAFC priorities			Explanation
			Mandate and Strategic Outcomes	S&T Strategic Direction	International Strategy	
CRP 1978/9	Strengthen cooperation between OECD member countries in agricultural research by funding workshops/ conference and awarding fellowships	1978/79	Partial	Yes	Yes	CRP funded conferences in Canada have supported AAFC and CFIA priorities
IATRC 1980	Improve quality of international agricultural trade research and analysis. Facilitate interaction of economic analysts from member countries and academia	1981	Yes	No	Yes	IATRC is not a science-based organization
CABI 1910	Apply scientific expertise to solve problems in agriculture and the environment. Conducts research, publishes books, articles and compendia	1991	Yes	Yes	Yes	Not required
IGC 1995	Further international co-operation in all aspects of trade in wheat, coarse grains, (maize (corn), barley, sorghum and other grains), rice and oilseeds and their products	1995	Yes	No	Yes	IGC is not a science-based organization

<sup>11</sup> GBIF makes available international data and information on biodiversity to member countries:

<http://www.gbif.org/whatisgbif#vision>

<sup>12</sup> TempAg aims to support members in (1) addressing the challenge of using agricultural inputs more efficiently while lowering pressure on the environment by reducing losses of water and nutrients, and greenhouse gases from agricultural lands, and (2) developing farming systems and landscapes that respond positively to economic and climatic shocks.

International organizations and year established	Raison d'être /Activities	Year AAFC became member	Degree to which activities align with AAFC priorities			Explanation
			Mandate and Strategic Outcomes	S&T Strategic Direction	International Strategy	
ITPGRFA 2004	Facilitate a simplified approach for member countries to conserve and share plant genetic resources for research, breeding and training purposes for food and agriculture. The mechanism developed under the treaty is the Multi-Lateral System (MLS)	2004	Yes	Yes	Yes	Not required
WI 2011	Develop a global strategic agenda for wheat research. To strengthen coordination of world-wide bread and durum wheat research in the field of genomics, genetics and agronomy	2014	Yes	Yes	Yes	Not required

### **3.1.3 ALIGNMENT WITH FEDERAL ROLES AND RESPONSIBILITIES**

AAFC is responsible for providing information, research and technology, and policies and programs to help Canada's agriculture, agri-food and agri-based products sector compete in markets at home and abroad, manage risk and embrace innovation. The activities of the Department include the development of, and engagement in, international policy in support of its mandate.

The international focus of Canada's agriculture and agri-food sector makes export opportunities critical to its long-term growth and prosperity. The Grant Program provides Canada the opportunity to participate in international fora, and in doing so, keep abreast of international developments. The purpose of AAFC's voluntary participation in various international organizations is to represent the interest of Canada's agriculture and agri-food sector. The six international organizations require the participation of the national governments of the country, or, delegates that can represent the collective interests of the agriculture and agri-food sector in that country. The Federal Government is therefore best suited to represent Canada's agriculture and agri-food sector in the six international organizations.

The evaluation found that the CRP has fostered close connections between AAFC and CFIA. CRP conferences and fellowships have generated knowledge that supports the needs of AAFC and CFIA scientists. In addition, AAFC's Acting Assistant Deputy Minister, Science and Technology Branch (STB), is currently Canada's representative on the CRP's Governing Body, and one of CFIA's esteemed experts is a member of the CRP's Science Advisory Board. From this perspective, AAFC and CFIA share the responsibility of representing Canada on the CRP.

AAFC's membership in international organizations has paved the way for academia and industry to participate in projects and working groups.

## 3.2 PERFORMANCE

### 3.2.1 ACHIEVEMENT OF EXPECTED OUTCOMES (EFFECTIVENESS)

Each international organization has a distinct mandate and objective and an established governance structure through which it reports on its achievements and outcomes. It follows that AAFC activities, through membership, contribute to the achievement of outcomes of each of the international organizations.

At the same time, AAFC's participation in the organizations is directed by the Grant Program's Ts&Cs. Treasury Board's *Directive on Transfer Payments* requires the Ts&Cs of a transfer payment program to specify expected results. The evaluation assessed the extent to which AAFC's participation in the six international organizations helped achieve the expected results.

The Grant Program's Ts&Cs outlines six expected results. These expected results, which are activity focused, are addressed by various undertakings by Canada as a result of membership. The section below provides a summary of these actions against the expected results.

#### Expected Result 1: A Canadian government presence in international organizations with access to international fora of senior decision makers in agriculture, the agri-environment, science and development

As a member of the science-based international organizations, AAFC senior officials participate in their governing bodies and committee meetings, connecting them to senior decision-makers from member countries and providing the opportunity to influence decisions that could impact the Canadian sector. For example, an AAFC Research Development Technology Director, STB, was chair of CABI's Executive Council, AAFC's acting Assistant Deputy Minister, STB, is a member of the WI's Institutions' Coordination Committee and CRP's Governing Body, and an AAFC Research and Development Director, STB, is a member of the ITPGRFA's Governing Body and Bureau.

Membership on decision making bodies also provides the opportunity for Canada to showcase its expertise in agriculture and agri-food research to other countries. For example, AAFC's presentation to the WI's Institutions' Coordination Committee on the Canadian Wheat Alliance, in Paris in 2013, showcased Canada's significant interest and expertise in wheat and wheat yield improvement. Similarly, AAFC's long-time and close relationship with CABI has allowed AAFC to influence the research focus of CABI's research centre in Delémont, Switzerland, from pests prevalent in Europe to those prevalent in China.

In addition, Canada has been successful in influencing the IGC to bring attention to issues of importance to the Canadian agriculture and agri-food industry. Two such examples are low level presence (LLP) and maximum residue limits (MRL). LLP can be defined as the unintended presence, at low-levels, of unauthorized genetically modified (GM) crops in imported grain, food or feed. Once a GM crop is authorized for commercial use in a country, trace amounts of that crop may become mixed with other varieties of crops in that

country or in transit. As a result, a GM crop that is authorized in an exporting country may be present at low levels in grain, food and feed shipments that are imported into another country where the GM crop is not authorized. This is where occurrences of low level presence (LLP) originate<sup>13</sup>. The enforcement actions taken when LLP is detected can lead to disruptions to trade and increased costs to industry and governments, for both imports and exports. Such disruptions and costs occur even when LLP occurrences are unlikely to pose a risk to human or animal health or to the environment. Similarly, MRLs ensure that exposure to pesticide residues on agricultural produce present no concerns for human health. The MRLs set by Health Canada are consistent with those of other major OECD countries<sup>14</sup>. The Canadian agriculture and agri-food industry, including the pulse, oilseed, cereal and horticulture sectors, consider MRLs to be trade risks due to gaps and inconsistencies in MRL standards between Canadian and foreign markets. Industry estimates that billions in Canadian commodity exports are at-risk each year due to inconsistent or nonexistent pesticide MRL standards in foreign markets. As a major exporter of grain, which relies on a bulk handling system to move very large quantities of grain over very long distances, LLP and MRL pose significant trade risks for Canada. As such, Canada is playing a leading role on these issues and using fora, such as the IGC, to enhance knowledge of the issues and support for solutions.

#### Expected Result 2: Access for participating member countries, including Canada, to international agricultural research databases

Access to international agricultural research databases allows Canadian scientists to advance their research using information that is otherwise not available in Canada. For example, CABI's extensive databases of abstracts, journals and compendia are available to member countries. CABI is recognised for its expertise in pest control, and AAFC researchers have accessed its expertise to support research on pests that pose a threat to Canadian crops. In turn, AAFC scientists have authored and co-authored CABI articles. The ITPGRFA makes available to Canadian researchers the worldwide network of plant genetic resource centres established by the Food and Agriculture Organization (FAO), the International Plant Genetic Resources Institute<sup>15</sup> and all resources under the control of the contracting parties.

From 2010 – 2014, advances in bio-control systems for Canadian crop production have been made on the leek moth, orange wheat blossom midge, European apple sawfly and houndstongue. In addition 21 scientific research papers and one book were published from 2010 – 2014 resulting from collaborative work between AAFC and CABI. The WI is developing a Wheat Information System that maps and qualifies the millions of data points along the wheat genome. Canadian scientists are participating in this project, and, upon completion, will provide access to information that can accelerate research in Canada.

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<sup>13</sup> Background – Low level Presence of Genetically Modified Crops: AAFC website. Accessed January, 2015

<sup>14</sup> Consumer Product Safety. Pesticides and foods. Health Canada: [http://www.hc-sc.gc.ca/cps-spc/pubs/pest/\\_fact\\_fiche/pesticide-food-alim/index-eng.php](http://www.hc-sc.gc.ca/cps-spc/pubs/pest/_fact_fiche/pesticide-food-alim/index-eng.php). Accessed January, 2015

<sup>15</sup> Agriculture and Agri-Food Canada. *Plant Gene Resources of Canada*: [http://pgrc3.agr.gc.ca/about-propos\\_e.html](http://pgrc3.agr.gc.ca/about-propos_e.html) (Accessed July 2014)

Expected Result 3: Access for participating member countries, including Canada, to international collections of micro-organisms for R&D

From April 1, 2010 to March 31, 2014, there were no activities that supported expected result 3.

Expected Result 4: Access for participating member countries, including Canada, to the agri-environmental tools and management practices from around the world

The CRP facilitates the dissemination of information on agri-environmental tools and management practices. From 2010 to 2013 the Canadian-led conferences included Conservation of Animal Genetic Resources, Veterinary Drug and Pesticide Residues and Contaminants in Foods, Mitigating Infectious Disease Agents in Farmed Aquatic Crustaceans, Meat Science and Technology, Alternatives to Veterinary Antibiotics and Best Practices in Documenting Negligible Risk for Trichinella in Pork. The WI has established an expert working group in agronomy that will develop strategic areas of research and potentially a global vision for integrated management practices that incorporate economic and environmental tools.

Expected Result 5: Access to research on priority issues for Canadian agriculture within a global context and help achieve success in global and domestic markets

The Canadian agriculture and agri-food sector is faced with challenges similar to that of its global competitors - that is, to increase productivity to meet a growing global demand for agricultural products.

AAFC's membership in the WI, ITPGRFA and CABI provides Canada the opportunity to keep abreast of the latest scientific research aimed at improving agricultural productivity. Through the WI, Canadian scientists are involved in the International Wheat Genome Sequencing Consortium, and other expert groups, which is paving the way for developing new strains of wheat that could potentially improve yields and address risks associated with food security. Similarly, access to genetic resources, through the ITPGRFA provides Canada with the resources to develop new traits for agricultural plants. Access to such resources is considered an important contributing factor in the global effort to increase agricultural productivity. AAFC's membership in CABI provides researchers with access to knowledge to develop bio-control systems for agricultural crops grown in Canada. Such systems will support an increase in productivity by minimizing the effects of pests and diseases on crops. The regular reports, papers and scientific information generated by these organizations are available to Canada as a member country. This knowledge is diffused to AAFC scientists and other Canadian institutions by the respective liaison officers.

Finally, when AAFC was a member of the IATRC, membership provided the Department with information and analysis on issues that impacted international trade. AAFC's participation also ensured that Canada's domestic issues were taken into account by Canada's international counterparts. For example, in 2011 the IATRC organized a theme day discussion with world experts on price volatility. Reports from this discussion informed the World Bank for the debate that addressed mechanisms to mitigate the impact of price

volatility on lower income consumers without disrupting an effective global trading environment for agricultural producers.

Expected Result 6: Increased knowledge of, and adherence to, international policies, standards and approaches in the agricultural, agri-food, and agri-based products sector

Knowledge of, and adherence of countries to, international policies, standards and approaches in the agricultural, agri-food, and agri-based products sector helps in reducing tariff and non-tariff trade barriers and facilitates global trade. The IGC is an information sharing forum that collects, analyses and disseminates statistical information to promote openness and fairness in the grains sector so as to contribute to grain market stability and enhance world food security. Canada, along with like-minded countries (US and Australia) was successful in influencing the IGC to include oilseeds (canola and soybeans) in the mix of crops covered by the IGC. Also, Canada has been successful in bringing the issue of LLP to an IGC roundtable discussion. Finally, a Canadian delegation, including the Canadian International Grains Institute (CIGI), provided an update to the IGC on Canada's successfully transitioning from the Canadian Wheat Board to an open market.

Similarly, AAFC's membership in the IATRC gave Canada access to economic information and data that informed the work of the Research and Analysis Directorate (RAD), Strategic Policy Branch (SPB), facilitating its role in providing analytical support to program design and administration and reporting to Parliament.

In addition to long-term payments, the short-term payments supported the expected results of the Grant Program. AAFC payments to the IICA and to the FAO supported the objective of enhancing the capacity of other countries in adopting science based approaches to regulating agri-food trade. Similarly, other payments to the FAO aimed at improving the understanding of other countries of agri-food biotechnology and their benefits. The objective of these short-term payments was to improve the export of Canadian food, and for countries to adopt science based approaches similar to those adopted by Canada.

### **3.2.2 DEMONSTRATION OF ECONOMY AND EFFICIENCY**

The evaluation explored the resources utilized in the Grant Program to achieve the expected results. Based on the *Directive on the Evaluation Function* (TBS, 2009), demonstration of economy and efficiency is defined as an "assessment of resource utilization in relation to the production of outputs and progress towards expected outcomes."

Resources utilized in the Grant Program consisted of AAFC's membership payments to international organizations plus the number of Full-Time-Equivalents (FTEs)<sup>16</sup> dedicated to implementing the Grant Program. AAFC's membership payments to the international organizations were generally based on a formula established by the international

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<sup>16</sup> Full-Time Equivalent (FTE) is a measure of the extent to which an employee represents a full person-year charge against a departmental budget – AAFC Report on Plans and Priorities 2014-15

organization (see Table 2)<sup>17</sup>. While no FTE's were officially allocated to the Grant Program, the evaluation sought to determine the notional number of FTEs that were involved in implementing the program as this would provide an indication of the resources utilized. To obtain a notional figure for FTEs, AAFC key informants were asked how much of their time, and others, was dedicated to working on the Grant Program. This would include those administering the program and those that acted as liaison officers. The evaluation determined that the notional number of FTEs dedicated to implementing the program was 4.95 FTEs (see table in Annex C).

The outputs of the Grant Program include the resources leveraged from the international organizations, such as the expertise and knowledge gained from other countries, and the results that were achieved (the previous section provides an overview of the expected results achieved through membership in the six international organizations). Based on an assessment of the resources utilized against the results achieved, the evaluation determined that minimal resources were used to implement the Grant Program.

### ***3.2.3 DEMONSTRATION OF VALUE FOR MONEY***

“Value for money” of an initiative or program generally articulates the benefits an organization obtains from the goods and services it acquires against the resources utilized.

In order to gain a broader understanding of the value the international organizations provide, the evaluation considered the challenges the sector faces and the extent to which the organizations support the sector in addressing these challenges. In this regard, the evaluation took into consideration the following factors: (1) whether the objective(s) and resources of the organization were a ‘good fit’ with the long-term needs of Canada’s agriculture and agri-food sector, (2) examples of outcomes that have been achieved over the evaluation period and their impact or potential impact on the sector,<sup>18</sup> and, (3) whether membership includes countries of relevance to Canada in terms of trade.

One of the most pressing challenges the global agriculture and agri-food sector faces in the future is the need to increase agricultural productivity to meet a growing global population amidst a decreasing agricultural resource base and the potential effects of climate change. This challenge is being met by various international organizations. Canada is facing similar challenges, and as a major trading nation, must remain connected with the organizations that will shape international policy on agriculture and agri-food S&T and trade.

#### **The Wheat Initiative (WI)**

The WI was adopted at the G20 Agricultural Ministers meeting in June, 2011, to support the goal to increase agricultural productivity for a growing world population. Wheat and

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<sup>17</sup> Budgets and membership payments of the international organizations are usually set through negotiations

<sup>18</sup> This approach did not include a comprehensive assessment of all outcomes achieved (and not achieved) through the Grant Program. Instead, in order to gain an in-depth appreciation of the value the six international organizations bring to Canada’s agriculture and agri-food sector, the evaluation considered select projects that achieved outcomes during the evaluation period.



maize production combined are estimated to account for over 80% of developing countries cereal imports, and forecasts call for wheat to become the most important cereal in the world to address world food security<sup>19</sup>. Canada is the world's third largest wheat exporter (tied with Australia). With the prospect of a growth in wheat export volumes to BRIC countries in the future, it is important for Canada to remain competitive in the production and export of wheat.

A AFC contributed \$13,948 in 2013-2014 for membership in the WI. Membership has permitted Canadian scientists to be involved in the International Wheat Genome Sequencing Consortium, which aims to complete the wheat genome by 2016, and the Wheat Information Systems working group. Completing the wheat genome reference sequence is considered an essential platform for improving wheat breeding and could be the start of the production of a new generation of wheat varieties. The genome sequence has the potential of aiding breeders to develop new strains that could improve yields, disease and pest resistance, or abiotic stress tolerance. The development of new strains has the potential of decreasing the time from discovery to commercialisation of new varieties for farmers. Participation in these projects alone has the potential of offering long-term value to Canada's agriculture and agri-food sector.

Value is further enhanced by the knowledge that Canadian scientists continue to gain by interacting with experts from member countries. The WI connects Canada with the world leaders in wheat research from Argentina, Australia, Brazil, Canada, China, France, Germany, India, Ireland, Italy, Japan, Spain, Turkey, UK and the US, and private companies such as Bayer CropScience, Dow AgroSciences, Monsanto Company and Syngenta Crop Protection AG. In support of its objectives, the WI facilitates the exchange of germplasm, data and materials in accordance with the ITPGRFA.

#### International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

Crop varieties with a narrow genetic base can be completely destroyed by disease. In order to minimise this possibility, plant breeders source the genes of older or exotic varieties or closely related wild species to develop traits that will make crops resistant to emerging diseases. Maintaining resistance is a continual process, as new varieties are resistant to pests and diseases for an average of five years, while it generally takes eight to eleven years to breed new varieties<sup>20</sup>. Despite advances in gene technology, natural and human-selected variation is a dominant source of plant breeding.

A AFC contributed \$ 123,718 in 2013-2014 for membership in the ITPGRFA. Access to genetic resources for developing new traits for agricultural plants is considered an important contributor in the global effort to improve agricultural productivity. This is becoming increasingly important as the land base for wild plants to grow continues to shrink, and many plant species and varieties are disappearing. The ITPGRFA makes available to member countries access to 64 of the world's most important crops, that together account for 80 percent of all human consumption. Access to these crops gives

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<sup>19</sup> D.Hoisington. Proceedings of the National Academy of Sciences of the United States of America, 1999. *Plant Genetic Resources: What can they contribute towards increased crop production*. Vol 96, pages 5937–5943.

<sup>20</sup> US Department of Agriculture. *Economic Resources Services. Crop Genetic Resources An Economic Appraisal*. June, 2005

scientific institutions and private sector plant breeders the opportunity to work with, and potentially to improve, the materials stored in genebanks and crops growing in fields, facilitating research, innovation and exchange of information. Access to member countries' plant germplasm gives Canada the ability to continually develop new plant cultivars. The Multilateral System, made available to contracting parties, offers reduced transactional costs in sharing genetic resources. The Canadian Plant Germplasm System exists to conserve, increase utilization and catalogue germplasm of plants that might otherwise be lost. As Canada only conserves three percent of global crop genetic diversity, it is important for Canada to have access to genetic resources of other countries.

The Plant Gene Resources of Canada (PGRC), located in AAFC's Saskatoon Research Centre, is Canada's main repository for seed. The value of AAFC's membership in the ITPGRFA is further enhanced by the international activities of the PGRC, such as: (1) Working with Bioversity International and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India to identify 290 distinct accessions of the pearl millet that are not preserved in any other genebank, and (2) contributing to the World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture (PGRFA) hosted by the FAO.

There are approximately 133 contracting parties to the Treaty, further demonstrating the value membership brings to Canada and the sector. The US is a signatory but not a contracting party and participates in governance and committee meetings.

### CAB International (CABI)

A changing climate can have both positive and negative effects on agricultural productivity. A warmer climate could result in milder and shorter winters, offering some parts of Canada a longer growing season, potentially increasing productivity. A change in climate could also increase the prevalence of pests and pathogens in crops.

AAFC contributed \$317,000 in 2013-2014 for membership in CABI. AAFC's long-term work with CABI in developing bio-control systems for agricultural crops is becoming increasingly valuable to the sector. Through scientific research and knowledge sharing, CABI helps address issues of global concern on food security and the environment. CABI is recognised as a major contributor in the identification and bio-control of plant pests on a global scale.

AAFC's membership in CABI connects Canada with 48 member countries. While the US is not a member, membership connects Canada with scientists from the UK, China, India, Australia, the Netherlands, Switzerland and Chile.

### Cooperative Research Programme (CRP)

The goal of the CRP is to strengthen cooperation among OECD member countries in the field of agricultural (and fisheries) research, in order to build scientific knowledge that can inform and advise policy decisions. The CRP achieves this objective by funding/co-funding workshops and conferences and awarding fellowships to scientists to work in other member countries.

AAFC contributed \$ 54,011 in 2013-2014 for membership in the CRP. Membership benefits Canada's sector through the knowledge that is generated from conferences and fellowships. The kind of benefit the sector gains from international collaborations and knowledge sharing can be demonstrated by CFIA's contribution to the testing of standards for *Trichinella* in Pork<sup>21</sup>. Trichinellosis (trichinosis) is a disease that can affect both animals and humans. It is caused by small nematodes (roundworms) of the *Trichinella* species. Infective larvae are transferred (from host-to-host) by the consumption of raw or undercooked infected meat. The example shows how a community of experts from CFIA, the World Organisation for Animal Health (OIE) and Codex Alimentarius has advanced work on standards for *Trichinella* in Pork. This work culminated into a CRP sponsored workshop in May, 2013, Best Practices in Documenting Negligible Risk for *Trichinella* in Pork. The workshop developed recommendations on the appropriate level of testing, and the application of testing of *Trichinella* in pork.

The CRP has 25 member countries. However, since 2011 some countries have withdrawn, putting pressure on the availability of funding for CRP activities. Greece and Portugal withdrew in 2011 and France in 2012. Poland has indicated its intention to withdraw in 2015. At the same time, Chile joined in 2013 and Estonia in 2014.

### The International Grains Council (IGC)

Canada is the third largest exporter of wheat (after the USA and E.U) and the largest exporter of canola and lentils. Canada exports between 50-85% of its total production of grain. This amounted to a value of approximately \$17.9 billion in 2013<sup>22</sup>.

AAFC contributed \$260,233 in 2012-2013 for membership in the IGC. The value that the IGC brings to Canada's sector is reflected in its 'raison d'être', the country representatives that Canada interacts with and the information the IGC generates. The IGC is the only intergovernmental forum in which information on grain trade is shared among trading countries. It collects, analyses and disseminates statistical information to promote openness and fairness in the grains sector so as to contribute to grain market stability and enhance world food security. The IGC forum offers member countries the opportunity to share information and consult on grain market and policy developments. Membership on the IGC offers Canada essential information on key export markets to advance market access.

IGC membership consists of all major importing and exporting countries offering Canada a forum to interact and influence policy decision-makers from 29 countries, including Australia, the EU, India, Russian Federation, Ukraine and the US.

### International Agricultural Trade Research Consortium (IATRC)

The international focus of Canada's agriculture and agri-food sector means that it is important for AAFC to stay attuned to international trade policy negotiations in support of

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<sup>21</sup>Trichinellosis – CFIA Fact Sheet

<sup>22</sup> Source: Statistics Canada

the sector's long-term growth and prosperity. The IATRC is a network of world leading agricultural trade economists and practitioners that work together to further analysis and debate on improving global trade policy. The knowledge generated by the IATRC is used by the WTO and governments to support trade policy negotiations, further negotiating positions and adapt domestic policy instruments and support.

AAFC contributed \$25,000 to the IATRC in 2012- 2013 for membership in the IATRC. This funding created Executive Membership with the Consortium which allowed Canada to influence Consortium activities to further issues of importance to the Canada's trade policy agenda. IATRC work generates knowledge pertaining to trade policy through events, working papers and supporting graduate students and economists from developing countries. The value that membership in the IATRC brings to Canada is by way of the relationships that are built with influential agricultural trade researchers from around the world. Membership includes experts from the US, Netherlands, France, Germany, and Brazil. The Consortium also actively undertakes outreach efforts to foster participation from developing and emerging countries including India, China and African countries.

## **4.0 CONCLUSION AND RECOMMENDATIONS**

### **4.1 CONCLUSION**

The long-term viability of Canada's agriculture and agri-food sector depends on its success in existing and emerging international markets. It remains essential for the sector to stay connected with ever-evolving international trends and developments. Science, technology and innovation are some of the main drivers in the growth of markets and in addressing long-term challenges. Increasingly countries are facing similar challenges and are realising that collaborations with other countries and multilateral organizations are the most effective means of addressing these challenges.

There is a continued need for Canada to participate in international fora in order to keep abreast of international developments in agriculture and agri-food. The increased focus the federal government is putting on international trade and cooperation means that it is becoming more necessary for Canada to remain attuned to international development.

The Grant Program provides a vehicle for Canada to collaborate with multilateral organizations and other countries in agriculture related science-based and economic activities. This allows Canada to keep abreast of international developments and provides the opportunity to influence international policy development in favour of Canadian agriculture and agri-food sector. The Grant Program is also a vehicle by which the Canadian sector can collaborate on international projects and leverage science, technology and innovation related resources not available in Canada.

AAFC's contributions to the six international organizations under the Grant Program align with Federal Government and AAFC objectives. At the same time, there may be other international organizations that could potentially contribute to the objectives of the Grant Program.

AAFC is the appropriate department to represent Canada's agriculture and agri-food sector in international fora. Collaborations with the six international organizations resulted in activities and projects that collectively contributed to the expected results of the Grant Program with the use of minimal resources.

The Grant Program continues to provide value to Canada's sector through expertise and resources obtained from international collaborations and the ability to influence decision makers from other countries through international fora. AAFC membership in the WI, the ITPGRFA and CABI continues to bring substantial value to the sector and resonates with its long-term science, technology and innovation needs. Similarly, AAFC's membership in the IGC brings significant value to the sector by way of the economic information and the influence Canada is able to apply in international policy discussions through IGC fora.

## **4.2 ISSUES AND RECOMMENDATIONS**

The evaluation includes the following issue and recommendation:

### **Issue:**

AAFC's collaboration with science-based international organizations is long standing, with some memberships dating back over 30 years. Over this timeframe the policy landscape has evolved, including the science, technology and innovation needs of the sector. The evaluation found that AAFC's memberships in the international organizations have produced positive results for the sector. It also found that there are potentially additional organizations that could be of value to the sector.

### **Recommendation:**

STB, in consultation with PB and MISB, review AAFC's current memberships in science-based international organizations against other potential science-based international organizations, taking into account the long-term science, technology and innovation and market access needs of the agriculture and agri-food sector.

### **Management Response and Action Plan:**

Agreed. Taking into account the long-term science, technology and innovation and market access needs of the agriculture and agri-food sector, STB, in consultation with PB and MISB, will review AAFC's memberships in international science-based organizations to ensure that the Grant Program continues to further Canada's international priorities and commitments.

### **Target Date**

October 31, 2015

### **Responsible Position(s)**

DG Cross-Sectoral Strategic Direction, STB

## **ANNEX A: PROFILE OF INTERNATIONAL ORGANIZATIONS**

### **COOPERATIVE RESEARCH PROGRAMME ON BIOLOGICAL RESOURCE MANAGEMENT FOR SUSTAINABLE AGRICULTURE (CRP)**

The CRP is a scientific body established to strengthen cooperation between OECD member countries in the field of agricultural (and fisheries) research. Its goal is to build scientific knowledge, to inform and advise policy decisions, by funding/co-funding workshops and conferences and awarding fellowships to scientists of member countries. It has three priority areas for research: (1) The Natural Resources Challenge, (2) Sustainability in Practice and (3) The Food Chain.

The CRP was established in 1978/79 and reports to OECD's Committee of Agriculture. It has a Governing Body, which defines the general direction of the program, a Scientific Advisory Body and a network of National Correspondents. The National Correspondent of each member country is responsible for disseminating information on CRP's conference and fellowship opportunities to interested parties within their country and submitting the country's applications to the CRP. The Science Advisory Board is responsible for reviewing applications and providing advice to the Governing Body on CRP funding. Currently AAFC's acting Assistant Deputy Minister, STB represents Canada on CRP's Governing Body and a representative from the CFIA is currently a member of CRP's Science Advisory Board.

AAFC has been a member of the CRP since its inception. Membership payments are based on an OECD formula. Canada's National Correspondent is responsible for submitting applications to the CRP on behalf of Canada. From 2010 to 2013 the main recipients of CRP funding in Canada have been scientist from AAFC, CFIA and academia. Canadian scientists received funding for seven conferences, of which, four were submitted by AAFC scientists two by CFIA scientists and one from a Canadian university scientist. From 2010 to 2013 ten Canadian scientist were awarded CRP fellowships. Of these, seven were AAFC employees.

The CRP has 25 member countries. However, since 2011 a number of countries have withdrawn and others have joined. The countries that have joined have smaller economies than those that have withdrawn, putting more pressure on the availability of funding for CRP activities.

### **INTERNATIONAL AGRICULTURAL TRADE RESEARCH CONSORTIUM (IATRC)**

The IATRC is an international association of agricultural trade researchers and policy practitioners. Its objective is to improve the understanding and quality of international agricultural trade research and analysis and to foster collaboration among its members. While other organizations conduct analytical work on agricultural economics, such as the WTO and OECD, the IATRC's uniqueness is that it brings together experts from academia and government from around the world to consider policy approaches and issues that could help shape policy directions that influence international trade. The IATRC holds annual General Meetings and Public Symposia of its members. The IATRC contributed to

the negotiations on agriculture in the Uruguay Round (UR) of the General Agreement on Tariffs and Trade (GATT) bringing together global trade policy exporters to develop what became the current approach to domestic support calculations used by the World Trade Organization (WTO). More recently, in the absence of progress in the WTO negotiations, the IATRC has been examining issues related to the proliferation of Regional Trade Agreements and the link between productivity growth in agriculture and trade policy, both of which are important to the long-term growth of Canada's agricultural sector.

The IATRC was set up in 1980 by six United States agricultural economists. AAFC became a member of the IATRC in 1981. Membership has since grown to about 200 economists from academia, government, and other research institutions from 31 countries. European and Brazilian members are becoming more active and are funding joint activities with IATRC.

IATRC's Executive Committee is responsible for the direction and operation of the organization. AAFC was a member of the Executive Committee from 1984 to 2013, and as such, influenced the direction of IATRC's research agenda, as well as the policy themes for various workshops and conferences. Since 2013, when AAFC withdrew payment, Canada's ability to influence the IATRC to focus on priority issues related to trade policy has been reduced.

In December 2013 payment to the IATRC was not approved for fiscal 2013/14.

## **CAB INTERNATIONAL (CABI)**

CABI is an intergovernmental, science-based, organization with 48 member countries. Its mission is to improve people's lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment. Its research focus is on crop protection, invasive species, and animal and plant pests and disease. CABI has a major publishing arm, producing books, scientific articles and compendia. It has 10 research centres across the world.

CABI was founded in 1910 as the Entomological Research Committee. Canada's connections with CABI date back to the Second World War, when its headquarters were situated in Ontario, Canada (It was later moved to the United Kingdom). CABI's research station in Delémont, Switzerland was set up in 1948 to support Canada's need to address forest pests<sup>23</sup>. AAFC's relationship with CABI probably started in the 1960s when the station's research focus shifted from forest pests (in the 1950s and 1960s) to weeds and agricultural pests. In 1981 the organization was reconstituted as the Commonwealth Agricultural Bureau. In 1988, the UN established an agreement that renamed the organization as CAB International and registered it as an international treaty. In 1991 the agreement between CAB International and Canada was signed and ratified by the Canadian High Commissioner to the UK on behalf of Canada. The most recent funding agreement between the Government of Canada, as represented by the Minister of

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<sup>23</sup> Tim Collier, College of Agriculture, University of Wyoming. *Biocontrol News and Views for Wyoming*. WYO, Fall 2010, Vol 10, Issue 2, pages 1-2.



Agriculture and Agri-Food, and CAB International was signed by the Deputy Minister of AAFC on January 7, 2013. The Funding Arrangement was effective up to March 31, 2013.

CABI is governed by a Board of Directors, an Executive Council and a Review Committee. CABI's Chief Executive Officer is responsible for managing CABI's affairs and is directly accountable to the Chair of the Council. AAFC's Liaison Officer to CABI, a Director of Research Development and Technology, STB, was Chair of the Executive Council from 2006 to 2011 and an 'observer' on the Board of Directors from 2011 to 2012.

Canada continues to collaborate closely with CABI's research station in Delémont, Switzerland. Half of AAFC's membership payment goes towards supporting specific projects undertaken at the Delémont station. AAFC works with CABI on developing bio-control systems for agricultural crops in Canada. At the request of AAFC, the Delémont centre shifted its research focus from examining pests prevalent in Europe to examining pests from China. The close collaboration with the Delémont centre also provides Canadian post-graduate students the opportunity to obtain work experience. Ninety percent of students in Delémont are from Canada. AAFC has also collaborated with CABI in the production of its compendium on crop protection. The compendium is freely available and users include the CFIA and the provinces of Ontario and Quebec.

## **INTERNATIONAL GRAINS COUNCIL (IGC)**

The IGC is an information sharing forum that collects, analyses and disseminates statistical information to promote openness and fairness in the international grains sector so as to contribute to grain market stability and enhance world food security. The IGC is the only intergovernmental forum in which trading countries can share information on grain trade and consult on grain market and policy developments.

The IGC oversees the implementation of the 1995 Grains Trade Agreement (GTA). The GTA is an international treaty, under the auspices of the United Nations, with the objective of furthering international co-operation in all aspects of trade in wheat, coarse grains, (maize/corn, barley, sorghum and other grains), rice and oilseeds and their products. The GTA is comprised of: (1) the 1995 Grains Trade Convention and (2) the 1999 Food Aid Convention. The Grain Trade Convention is the trading component of the GTA, and seeks to further market stability and international cooperation in grains trade. The Food Aid Convention addresses world food security by way of food aid to developing countries in the form of grains and other eligible products.

The IGC consists of all major importing and exporting countries and membership classifies countries as importers or exporters based on the countries' average trade in grains. Canada is classified as an exporter<sup>24</sup>. As of 2014, IGC has 29 member countries, which includes Australia, Egypt, EU, India, Saudi Arabia and US. Membership payments are based on a formula that takes into account the size of a country's exports. The IGC holds two regular sessions, usually in June and December. Decisions are normally reached by consensus, although voting procedures are provided.

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<sup>24</sup> René Urueña. *International Grains Council*

Canada signed onto the GTA in 1995. Canada's involvement, however, dates back to 1949 when the 1949 International Wheat Agreement came into force, the precursor of the GTA. Canada is the third largest exporter of wheat (after the US and EU) and the largest exporter of canola and lentils. Canada exports between 50-85% of its total production of grain. Membership on the IGC offers Canada essential information on key export markets to advance market access. Canada has an influential role in the IGC, bringing industry issues to the table. Membership in IGC also provides an opportunity for Canada to showcase its offering to major grain importing countries. The Canadian delegation to IGC includes AAFC officers from MISB, and, on occasion, representatives from DFATD.

Canada's membership payment to the IGC was temporarily funded through the Grant Program for one year in 2012/13 by way of an amendment to its Ts&Cs.

### **INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE (ITPGRFA)**

The ITPGRFA, negotiated by the FAO Commission on Genetic Resources for Food and Agriculture, came into force in 2004. Prior to the Treaty, countries exchanged genetic resources through bilateral agreements or informal arrangements. While this practice continues, it can be costly for both parties. The Treaty aims to simplify and make it easier for countries to share their plant genetic resources. This is achieved by the ITPGRFA's Multi-Lateral System (MLS)<sup>25</sup>. Essentially the Treaty is a platform for ongoing discussions among member countries on aspects of the MLS, conservation and sustainable use of plant genetic resources, and which crops should be included as part of the treaty. On ratifying the Treaty, countries agree to make their genetic diversity and related information about the crops stored in their gene banks available to all treaty members through the MLS.

As of December, 2014, 133 countries are contracting parties to the Treaty. Canada played a prominent role in negotiating its provisions. Canada's objectives and negotiating mandate were set by Cabinet in 1998. The US also contributed to the development of the Treaty, but is not a contracting party (only a signatory). The US is involved to the extent that it participates in meetings and committees as an observer. In 2013 Japan became a contracting party.

Governance for the Treaty consists of a Governing Body and a Bureau. The Governing Body includes all member countries, and is responsible for implementing the Treaty. It holds sessions at least once every two years. Decisions are taken by consensus. AAFC's representative on the Governing Body and Bureau is the Director, Research Development and Technology, Manitoba. AAFC is also a member of the budget and finance committee as well as inter-sessional ad-hoc technical committees.

Canada ratified the Treaty in 2002 by Order in Council. Payment goes towards the core administrative budget of the ITPGRFA. Country payments follow a UN formula based on

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<sup>25</sup> The MLS requires member countries to use the materials for research, breeding and training for food and agriculture. It prevents countries from claiming intellectual property rights over those resources in the form in which they received them, and ensures that access to genetic resources already protected by international property rights is consistent with international and national laws.

the size of the country's economy. Prior to 2012 the Department of Foreign Affairs and International Trade (DFAIT, the predecessor to DFATD) contributed \$10,000 US each year to the core administrative budget of the ITPGRFA by way of a contribution agreement. In 2012 the DFAIT notified AAFC that it could no longer make a contribution due to departmental cutbacks.

The Plant Gene Resources of Canada (PGRC) program is Canada's main repository for seed genetic resources, and is located in AAFC's Saskatoon Research Centre. PGRC participates in the worldwide network of plant genetic resources centres established under the Treaty by the FAO and the International Plant Genetic Resources Institute. On Canada's behalf, PGRC accepted formal responsibility to maintain the principal world base collections of barley and oats and duplicate world base collections of pearl millet and cruciferous oilseeds. Over 110,000 seed samples are preserved at the Seed Genebank in Saskatoon<sup>26</sup>. There is also a genebank for small fruits and tree fruits at AAFC's research centre in Harrow, Ontario and a potato genebank in Fredericton, New Brunswick.

Access to plant germplasm gives Canada the ability to respond to the needs of producers by continually developing new plant cultivars that can resist pests, diseases and environmental stresses and open up new market opportunities. The Canadian Plant Germplasm System exists to conserve, facilitate utilization and catalogue germplasm of plants that might otherwise be lost.

## **INTERNATIONAL RESEARCH INITIATIVE FOR WHEAT IMPROVEMENT WHEAT INITIATIVE (WI)**

The International Research Initiative for Wheat Improvement, also known as the Wheat Initiative (WI), brings together a consortium of government, non-government and private enterprises to develop a global strategic agenda for wheat research. Its purpose is to provide an international platform that strengthens the coordination of world-wide bread and durum wheat research in the field of genomics, genetics and agronomy by sharing resources and expertise and contributing to world food security. The WI has 15 member countries and nine private enterprises.

The WI was adopted at the G20 Agricultural Ministers in June 2011 in Paris, France, and officially launched in September, 2011. The official launch in Paris brought together 24 countries, including scientists, country representatives and private companies. Canada was represented by AAFC and Genome Canada. AAFC played a significant role in developing the WI Charter, which outlines objectives, governance, financial resources and working groups. Member countries contribute a set annual membership fund to the WI. Canada became a signatory to the WI's Charter in April 2014.

The WI is governed by the Institutions' Coordination Committee, the Research Committee and the Scientific Board. In addition, Expert Working Groups are established to address governance, funding and research matters. At present, AAFC's Acting Assistant Deputy

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<sup>26</sup> Agriculture and Agri-Food Canada. *Plant Gene Resources of Canada*. July 2014: [http://pgrc3.agr.gc.ca/about-propos\\_e.html](http://pgrc3.agr.gc.ca/about-propos_e.html) (Accessed July 2014)

Minister, STB, is a member of the Institutions' Coordination Committee and AAFC's Senior Liaison Officer for the WI acts as an advisor to the Institutions' Coordination Committee. Two senior STB, AAFC officials are members of the Research Committee and Canada is represented on the Scientific Board by a Canadian academic.

In addition, several Canadian scientists have been actively recruited to participate in the expert working groups on the Wheat Information System, International Wheat Genome Sequencing Consortium, Durum Wheat Genomics and Breeding, Wheat Breeding Methods and Strategies, Wheat Phenotyping to Support Wheat Improvement, and Wheat Plant and Crop Modeling.

## **ANNEX B: Notional number of FTEs assigned to Grant Program**

**Table 2: Notional number of FTEs dedicated to administering the Grant Program and working with the international organizations that received long-term payments in 2013/14**

<b>International Organization</b>	<b>Branch</b>	<b>Role of FTE</b>	<b>Number of FTEs</b>
All	PB	Administration	0.5
CRP	STB	Liaison	0.05
IATRC	SPB	Liaison	0.05
CABI	STB	Liaison and project work	4.1
IGC	MISB	Liaison	0.1
ITPGR	STB	Liaison	0.1
WI	STB	Liaison	0.05
Total	Not applicable	Not applicable	4.95

## ANNEX C: Bibliography

- [1] Food and Agricultural Organization, "The International Treaty on Plant Genetic Resources for Food and Agriculture. What is the Multilateral System," 10 July 2014. [Online]. Available: <http://www.planttreaty.org/content/what-multilateral-system>. [Accessed 5 June 2014].
- [2] Organisation for Economic Co-operation and Development, "Governing Body of the Co-operative research Programme: Biological Resource Management for Sustainable Agricultural Systems," 1 January 2000. [Online]. Available: <http://webnet.oecd.org/OECDGROUPS/Bodies/ListByNameView.aspx>. [Accessed September 2014].
- [3] Organisation for Economic Co-operation and Development, "Co-operative Research Programme (CRP): 25 Member Countries," [Online]. Available: <http://www.oecd.org/tad/crp/CRP%20Member%20countries.pdf>. [Accessed August 2014].
- [4] International Agricultural Trade Research Consortium, "About IATRC," [Online]. Available: <http://iatrcweb.org/>. [Accessed 26 October 2014].
- [5] International Agricultural Trade Research Consortium, "IATRC Blue Book," April 2010. [Online]. Available: <http://iatrc.software.umn.edu/about/bluebook/BlueBook2010.pdf>. [Accessed 26 October 2014].
- [6] CABI, "CABI: a century of scientific endeavour," 2011. [Online]. Available: <http://www.cabi.org/uploads/CABI/about-us/cabi-100-year-book.pdf>. [Accessed September 2014].
- [7] CABI, "Agreement on CAB International," 4 September 1987. [Online]. Available: <http://www.cabi.org/Uploads/CABI/about-us/4.8.2-governance/cabi-agreement.pdf>. [Accessed April 2014].
- [8] International Grains Council, "About Us," [Online]. Available: <http://www.igc.int/en/aboutus/default.aspx>. [Accessed 8 August 2014].
- [9] International Grains Council, "Grains Trade Convention, 1995 Rules of Procedure," 1995. [Online]. Available: <http://www.igc.int/en/downloads/brochure/gtc1995.pdf>. [Accessed August 2014].
- [10] International Grains Council, "International Grains Council: History," 2013.
- [11] The International Treaty on Plant Genetic Resources, "About us," [Online]. Available: <http://www.planttreaty.org/content/overview>. [Accessed 8 October 2014].
- [12] Wheat Initiative, "Wheat Initiative Charter," 18 March 2013. [Online]. Available: <http://www.wheatinitiative.org/sites/default/files/docs/wheat-initiative-charter.pdf>.
- [13] Wheat Initiative, "Wheat Initiative Annual Report 2013," [Online]. Available: <http://www.wheatinitiative.org/about/reports>. [Accessed 17 July 2014].
- [14] Wheat Initiative, "International Research Initiative for Wheat Improvement. Kick-off meeting, Paris. Executive Summary," 15 September 2011. [Online]. Available: <http://www.wheatinitiative.org/about/reports>.

- [15] Treaties Office Database, "Summary of Treaty," 11 November 2009. [Online]. Available: <http://ec.europa.eu/world/agreements/glossary/glossary.jsp#TreatiesOffice>. [Accessed August 2014].
- [16] International Wheat Genome Sequencing Consortium, "Completing the Wheat Genome Reference Sequence in the Next Three Years: The Urgent Need for a Global Effort," 2014.
- [17] Wheat Initiative, "Ministerial Declaration. Action Plan on Food Price Volatility and Agriculture. Meeting of G20 Agriculture Ministers Paris, 22 and 23 June 2011," [Online]. Available: <http://www.wheatinitiative.org/about/reports>. [Accessed July 2014].
- [18] Organisation for Economic Co-operation and Development, "On-Line Guide to OECD Intergovernmental Activity. Governing Body of the Co-operative Research Programme," 15 September 2014. [Online]. Available: <http://webnet.oecd.org/OECDGROUPS/Bodies/ListByNameView.aspx>. [Accessed September 2014].
- [19] OECD. Research programme on biological resources in agriculture, "Conference sponsorships and Fellowships," [Online]. Available: <http://www.oecd.org/tad/crp/>. [Accessed 3 May 2014].
- [20] CABI, "CABI website," [Online]. Available: <http://www.cabi.org/>. [Accessed 13 April 2014].
- [21] The International Treaty on Plant Genetic Resources website, [Online]. Available: <http://www.planttreaty.org/>. [Accessed 5 June 2014].
- [22] Wheat Initiative website, [Online]. Available: <http://www.wheatinitiative.org/about/>. [Accessed 22 September 2014].
- [23] Organisation for Economic Co-operation and Development, "On-Line Guide to OECD Intergovernmental Activity. Governing Body of the Cooperative Research Programme," 15 September 2014. [Online]. Available: <http://webnet.oecd.org/OECDGROUPS/Bodies/ListByNameView.aspx>. [Accessed September 2014].
- [24] Mason and Gillespie, Biological Control Programmes in Canada 2001–2012, CAB International, 2013.