



Audit of the Management of Intellectual Property

September 18, 2018



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

Canada

The AAFC Audit Committee recommended this audit report for approval by the Deputy Minister on September 6, 2018.

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EXECUTIVE SUMMARY

Agriculture and Agri-Food Canada (AAFC) creates, acquires or procures a broad range of intellectual property products in the course of performing science and technology research. The intellectual property generated is a valuable Crown asset and must be managed in the best interest of the Canadian public.

The audit was included in the 2017-18 Integrated Audit and Evaluation Plan as intellectual property is characterized as a valuable asset for AAFC and that inadequate provisions for the management of intellectual property may result in failure to identify assets properly.

The objective of this audit was to determine whether the management of intellectual property for science and technology was operating effectively and managed in accordance with best practices, applicable policies, and related guidelines.

The audit concluded that AAFC's management of intellectual property for science and technology is operating effectively and in accordance with best practices and applicable policies and guidance.

The following strong practices were noted:

- Adequate procedures are in place for the development and approval of Collaborative Research and Development Agreements, Material Transfer Agreements, and National Research Participant Agreements.
- There is an adequate Invention Disclosure process in place to support the proactive identification and assessment of inventions.
- AAFC has adequate processes in place to solicit and evaluate proposals for the use of AAFC intellectual property and prepare license agreements.
- Ongoing intellectual property agreement monitoring and service standard tracking is taking place.
- The Office of Intellectual Property and Commercialization management is monitoring its human resourcing challenges and has implemented a proactive development program for new Commercialization Officers.

The audit identified opportunities to improve the following areas:

- Delivering intellectual property training on a consistent and regular basis for science researchers and science management and ensuring that the training is centrally monitored.
- Enhancing the reporting of the overall impact of AAFC's Intellectual Property activities to provide information to support the Results and Delivery agenda and demonstrate the value of AAFC's scientific innovations.

1.0 INTRODUCTION

1.1 OVERVIEW

1.1.1 Agriculture and Agri-Food Canada (AAFC) creates, acquires or procures a broad range of intellectual property products in the course of performing science and technology research. AAFC generates results such as new technologies, products, designs, methods, processes, plant varieties, germplasm, and genetic material. The results from this research are known as "intellectual property". The intellectual property generated is a valuable Crown asset and must be managed in the best interest of the Canadian public.

1.1.2 AAFC transfers its intellectual property through broad dissemination into the public domain, for example through scientific articles, reports, and other publications, which are all subject to the *Copyright Act* and which are owned by the Crown. Where appropriate, AAFC also transfers intellectual property for commercial exploitation to third parties. The protection, use, and transfer of AAFC's intellectual property must be based on sound decision making to ensure maximum benefit for Canada.

1.1.3 In March 2014, Science and Technology Deputy Ministers approved the science-based departments and agencies (SBDA) Intellectual Property Policy Framework to assist SBDAs in managing their intellectual property effectively and diligently. The Framework provides guidance to serve as the foundation for SBDAs to develop their own intellectual property policies and practices on how to identify, protect, and deploy intellectual property and outlines a set of common policy principles to ensure maximum benefit for Canada. It also addresses intellectual property in the context of Open Government and Open Science.

1.1.4 AAFC has an Intellectual Property Management Framework which encompasses the following key components:

- **Intellectual Property Policy:** Explains AAFC's guiding principles for intellectual property management;
- **Intellectual Property Decision-Making Manual:** Provides AAFC staff with guidelines to ensure a consistent approach to intellectual property management;
- **Intellectual Property Procedures Handbook:** Includes best practices, operating procedures, and documents that relate to the creation, identification, ownership, transfer and disposal of intellectual property at AAFC; and
- **Intellectual Property Information System (CCM Mercury):** Ensures the management of information on AAFC's intellectual property.

1.2 THE OFFICE OF INTELLECTUAL PROPERTY AND COMMERCIALIZATION

1.2.1 The Office of Intellectual Property and Commercialization, located within the Science and Technology Branch, is responsible for leading the management of intellectual property assets used or generated by the Science and Technology Branch throughout the research and development continuum. As its role includes facilitating research partnerships and the transfer of research results for the benefit of Canada, the Office is composed of 30 commercialization officers and assistants, located in the AAFC Research and Development Centers across Canada.

1.2.2 At AAFC, the Director, Office of Intellectual Property and Commercialization, on behalf of the Director General, Partnerships and Planning, and the Assistant Deputy Minister, Science and Technology Branch, is responsible for the implementation and administration of the AAFC Intellectual Property Policy. The Director is responsible for safeguarding the independence of AAFC research and development and is accountable for all agreements signed concerning intellectual property. Science Directors, as supervisors of the research scientists, are responsible for the administration of the *Intellectual Property Policy*. Research scientists, as the creators of the science knowledge, are responsible to prevent the unapproved disclosure of proprietary know-how belonging to the Crown or third parties and seeking advice related to safeguarding Crown intellectual property.

1.2.3 The Office of Intellectual Property and Commercialization provides four main functions:

- Providing consultation services on intellectual property-related and collaboration issues;
- Supporting collaborative research by formalizing agreements;
- Managing AAFC's portfolio of intellectual property assets (trade secrets, patents, licenses, plant varieties, copyright, royalties);
- Leading activities associated with Technology Transfer and Promotion, Commercialization and Business Development.

1.2.4 The Office of Intellectual Property and Commercialization manages a portfolio of active assets made of 213 patents and 263 varieties protected by Plant Breeders' Rights and is responsible for the execution of 2,025 active agreements pertaining to research activities, of which 684 are licensing agreements.¹ As of March 31, 2018, \$7,253,705 of gross royalties were generated from those licenses agreements.²

¹ As at August 31, 2018

² Information provided by the Office of Intellectual Property and Commercialization

1.3 AUDIT OBJECTIVE

1.3.1 The objective of this audit was to determine whether the management of intellectual property for science and technology is operating effectively and managed in accordance with best practices, applicable policies, and related guidelines.

1.3.2 This internal audit was included in the 2017-18 Integrated Audit and Evaluation Plan for the following reasons:

- Intellectual property is characterized as a valuable asset for AAFC, with an extensive portfolio that includes a broad range of publications, databases, software and both patented and unpatented technologies.
- Inadequate provisions for the management of Intellectual property may result in failure to identify assets properly, potential risk of legal liabilities, and missed opportunities to maximize its potential benefits.

1.4 AUDIT SCOPE

1.4.1 The audit examined management practices in place as at March 31, 2018.

1.4.2 The audit focused on the controls administered by the Office of Intellectual Property and Commercialization. Therefore, the following areas were not assessed in the audit:

- **Physical Security:** Although physical security is an important control area related to protecting AAFC's intellectual property, it is a joint responsibility of research centre management and departmental security, and is unique to each centre.
- **Foreign Research Participant Program:** The administration related to foreign researchers at AAFC facilities is managed by Science and Technology Branch's International Engagement Division.
- **Science Strategies:** Although intellectual property and knowledge transfer were factors in the establishment of the science strategies, science direction is broader than the role of the Office of Intellectual Property and Commercialization.
- **Science Promotion Process:** The promotion process for AAFC's research scientists was audited by the Office of Audit and Evaluation in 2016. The audit reviewed how promotion applications were assessed to determine the scientists' innovation, productivity, impact, and recognition.
- **Royalty Collection:** The Office of Audit and Evaluation is scheduled to conduct a specific Audit of the Revenue Control Framework in 2020.
- **Non-Science and Technology Intellectual Property Management:** Intellectual Property is generated across AAFC. Only science and technology-based intellectual property is included in the scope of this audit.

1.5 AUDIT APPROACH

1.5.1 The audit approach and methodology were risk-based and consistent with the *International Standards for the Professional Practice of Internal Auditing* and the Treasury Board *Policy on Internal Audit*. These standards require that the audit be planned and performed so as to conclude against the objective. The audit was conducted in accordance with an audit program that defined audit tasks to be performed in the assessment of each line of enquiry.

1.5.2 The following risk-based lines of enquiry were identified:

- **Training and Guidance:** Policies and procedures, training, and awareness activities were in place to support the identification and protection of intellectual property and align with the Intellectual Property Policy Framework for Science-Based Departments and Agencies and Open Science Initiative.
- **Identification, Protection, and Transfer:** Adequate processes and controls were in place for the identification, protection, and transfer of intellectual property for the benefit of Canada.
- **Monitoring and Reporting:** Monitoring of active intellectual property agreements and reporting on the overall benefit for Canada was conducted on a regular basis.

1.5.3 Audit evidence was gathered through various methods including review and analysis of relevant documentation, sampling and review of Office of Intellectual Property and Commercialization agreements, and interviews.

1.6 ADDITIONAL AUDIT WORK

1.6.1 In addition to carrying out the audit, the Office of Audit and Evaluation also provided the Office of Intellectual Property and Commercialization with:

- **Business Process Maps:** To understand the controls in place for the detailed Invention Disclosure and the Plant Breeders' Rights Processes, the audit team developed business process maps. These maps were validated with the Office of Intellectual Property and Commercialization.
- **Benchmarking Analysis:** To provide supporting information for the audit, the intellectual property management practices in three science-based departments and agencies were assessed.

1.6.2 This audit report includes in applicable sections comparative information from the benchmarking analysis to highlight science-based departments and agencies practices.

1.7 CONCLUSION

1.7.1 AAFC's management of intellectual property for science and technology is operating effectively and in accordance with best practices and applicable policies and guidance. Opportunities to improve science researcher training and performance reporting were identified.

1.8 STATEMENT OF CONFORMANCE

1.8.1 In the professional judgment of the Chief Audit Executive, sufficient and appropriate audit procedures have been conducted and evidence gathered to support the accuracy of the conclusion provided and contained in this report. The conclusion is based on a comparison of the conditions, as they existed at the time of the audit, against pre-established lines of enquiry that were shared with management prior to the conduct of the audit. The conclusion is applicable only to the entity examined.

1.8.2 This audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing*, as supported by the results of the Quality Assurance and Improvement Program.

2.0 DETAILED OBSERVATIONS, RECOMMENDATIONS AND MANAGEMENT RESPONSES

The following sections present the key observations, based on the evidence and analysis associated with the audit. For observations that include an opportunity for improvement, recommendations have been provided with management responses that comprise:

- An action plan to address each recommendation;
- A lead responsible for implementation of the action plan; and
- A target date for completion of the implementation of the action plan.

TRAINING AND GUIDANCE

Line of Enquiry: Policies and procedures, training, and awareness activities were in place to support the identification and protection of intellectual property and align with the Intellectual Property Policy Framework for Science-Based Departments and Agencies and Open Science Initiative.

Audit Work Conducted: To assess the criterion above, the audit reviewed documentation provided and interviewed Science and Technology Branch staff.

2.1 TRAINING OF RESEARCHERS AND SCIENCE MANAGEMENT

2.1.1 Intellectual property training is the key control to ensure that the researchers who generate intellectual property are aware that it is a valuable Crown asset that should be disclosed and protected according to established procedures.

2.1.2 In accordance with AAFC's Intellectual Property Management Framework, it is important that researchers and science management are aware that all intellectual property matters and intellectual property-related agreement development should be referred to the centralized Office of Intellectual Property and Commercialization. In addition, it is important that researchers and science management are aware that agreements need to be approved by the proper authority. The need to improve intellectual property awareness among researchers was noted by management and the auditors observed examples of cases when researchers signed intellectual property-related agreements without proper signing authority or Office of Intellectual Property and Commercialization involvement.

2.1.3 The audit was informed that the Office of Intellectual Property and Commercialization engages with researchers and science management regularly. For example, the audit observed in committee records that management from the Office of Intellectual Property and Commercialization delivers presentations to science management at Science and Technology Branch-level committees. When new researchers join AAFC, the local Commercialization Officer provides an introduction to the

services and resources provided by the Office of Intellectual Property and Commercialization. Based on interviews and a review of a sample of Performance Management Agreements (PMAs), the audit noted that Commercialization Officers are required to deliver at least one intellectual property-related training session to their assigned research centres annually. Also, the Office of Intellectual Property and Commercialization has created a centralized online repository for intellectual property training material for reference by Commercialization Officers.

2.1.4 When Commercialization Officers deliver local training, they inform their Team Leader for performance tracking purposes. The audit was informed that the Office of Intellectual Property and Commercialization does not centrally track the researchers and science management who received training, what training was received and when. Management stated that training is tracked only when it is mandatory, such as the training on Ethics in Copyright and Publications. Post-training satisfaction surveys are not consistently conducted on the training provided to determine its effectiveness and where improvements may be needed.

2.1.5 The AAFC Intellectual Property Decision-Making Manual (2009) does not clearly articulate who is responsible for designing, delivering, and monitoring training on intellectual property. Intellectual property training is not specifically listed as a responsibility of the Office of Intellectual Property and Commercialization.

2.1.6 AAFC's approach to researcher training is similar to the three science-based departments and agencies that were included in the audit's benchmarking analysis. The organizations indicated that the relationship of the local intellectual property team members (known as Commercialization Officers at AAFC) with the research centre staff is the core awareness activity. All of the organizations supplement this working relationship with access to intellectual property information, such as an intranet site and employee newsletter articles. One organization noted that it has regularly scheduled on-boarding days to ensure consistent messaging.

2.1.7 As training at AAFC is not provided in a consistent manner or on a regular basis and is not tracked, the audit was unable to conclude on the efficiency and effectiveness of intellectual property training or the completion rate for the training.

2.1.8 There is a risk that valuable intellectual property may be prematurely communicated outside AAFC, putting at risk the ability to protect inventions. Training AAFC researchers on their roles and responsibilities related to safeguarding intellectual property is the key control to reduce this risk.

RECOMMENDATION 1 – SCIENCE RESEARCHER TRAINING

The Assistant Deputy Minister, Science and Technology Branch should provide regular and consistent training on intellectual property principles that is centrally monitored.

MANAGEMENT ACTION PLAN AND RESPONSE

Management Response and Action Plan: Agreed.

Science and Technology Branch will use a systematic approach to deliver the training related to Intellectual Property by formalizing a training plan. The training plan will be developed by compiling topics based on specific training needs of individual centres and by ensuring that the basic elements of Intellectual Property are included in the plan. Science and Technology Branch will ensure that the training sessions are delivered in a consistent manner by working with Directors, Research, Development and Technology to ensure participation from the researchers.

Training sessions will be available to AAFC's scientific community on Office of Intellectual Property and Commercialization Knowledge Workspace.

A central database containing information about the training provided and attendees will be developed, implemented and maintained.

Post training satisfaction surveys will be used to evaluate the effectiveness of the training program. The program will be modified accordingly.

Lead Responsible: Assistant Deputy Minister, Science and Technology Branch

(Science and Technology Branch, Director General Partnerships and Planning Directorate and Regional Directors General)

Target Date for Completion:

Centralized Training Program: December 2018

Database: September 2019

Survey: December 2018

2.2 TRAINING OF COMMERCIALIZATION OFFICERS

2.2.1 Management at the Office of Intellectual Property and Commercialization is closely monitoring its human resources capacity. They have identified that 25 percent of the staff of the Office of Intellectual Property and Commercialization is currently eligible to retire and 50 percent will be eligible in the next five years. Management noted that to bring in new staff, the Office of Intellectual Property and Commercialization is on its third iteration of the Commercialization Officer Development Program. Interns have 12 months of on-the-job training to gain the understanding, perspective, skills, and experience required to be a competent Commercialization Officer. Once the program is completed, Interns must apply through a competitive process to become a Commercialization Officer. This program also enables senior Commercialization Officers to develop leadership skills by providing supervision and coaching opportunities.

2.2.2 AAFC's training program for Commercialization Officers was in line with the three selected science-based departments and agencies assessed as part of the audit's benchmarking analysis. In all the organizations, on-the-job training was the primary training mechanism. Similar to AAFC, one organization also stressed the importance of mentoring junior team members by more experienced team members.

2.2.3 The Office of Intellectual Property and Commercialization management is monitoring its human resourcing challenges and has implemented a proactive development program for new Commercialization Officers.

IDENTIFICATION, PROTECTION AND TRANSFER

Line of Enquiry: Adequate processes and controls were in place for the identification, protection, and transfer of intellectual property for the benefit of Canada.

Audit Work Conducted: To assess the criterion above, the audit reviewed:

- The agreement development and approval process for agreements types selected during the audit's risk assessment phase: Collaborative Research and Development Agreements, Material Transfer Agreements, and National Research Participant Agreements;
- The invention disclosure process and documentation of the protection decisions; and
- The license agreement development and approval process.

Where samples files were reviewed, specific files were selected from the population based on geographical location and Commercialization Officer, to obtain a cross-Canada perspective.

2.3 COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

2.3.1 AAFC researchers frequently work with external parties on collaborative research. This work is defined in Collaborative Research and Development Agreements (CRDAs) which are legally binding agreements between two or more parties seeking to work collaboratively on a research project towards common goals, and sharing the benefits and risks entailed. These CRDAs can arise as part of projects related to AAFC contribution programs or through industry or academia requests for AAFC scientific expertise. Intellectual property provisions are a key component of CRDAs.

2.3.2 CRDAs are developed by AAFC's Office of Intellectual Property and Commercialization on behalf of the department's researchers to assist with managing collaborative projects.

2.3.3 The audit reviewed the development and approval processes for a sample of seven CRDAs out of a population of 107 and observed that the sample demonstrated that a consistent agreement development process was in place. The approval of agreements was carried out by authorized individuals and the process was tracked for service standard purposes through a centralized agreement tracking inbox. The agreement documentation was maintained in the department's intellectual property information system. As such, the audit determined that AAFC has adequate procedures for the development and approval of collaborative agreements.

2.4 MATERIAL TRANSFER AGREEMENTS

2.4.1 Throughout the course of scientific research, AAFC researchers may be required to transfer material in or out of the Department. When material is protected intellectual property, a formal Material Transfer Agreement must be in place to access proprietary third-party intellectual property or allow the use of AAFC intellectual property. These agreements should address the implications of using the intellectual property on research and development, and the rights to own, control, exploit, and transfer any resulting intellectual property.

2.4.2 The audit reviewed the development and approval processes for a sample of seven Material Transfer Agreements out of a population of 272³ and observed that the sample agreements were drafted by a Commercialization Officer or Team Leader in accordance with formal procedures. All of the Material Transfer Agreements reviewed were approved by authorized AAFC officials. The information pertaining to the Material Transfer Agreements was tracked in the department's intellectual property information system. As such, the audit determined that adequate processes are in place to develop agreements for the transfer material in and out of AAFC.

³ Fiscal Years 2016-17 to 2017-18

2.5 RESEARCH PARTICIPANT AGREEMENTS

2.5.1 A Research Participant Agreement should be signed by all visiting workers (non-Government of Canada employees), including all university students conducting research in any of AAFC facilities. By hosting visiting researchers, AAFC benefits from scientific expertise to carry out research projects.

2.5.2 AAFC has two processes to manage visiting researchers: the Foreign Research Participant Program that manages visitors from foreign countries and the National Research Participant Program that manages visitors from within Canada. There is a defined process to engage National Research Participants that is managed by the Office of Intellectual Property and Commercialization, using an online Hub.

2.5.3 The audit reviewed the development and approval processes for a sample of three National Research Participant Agreements out of a population of 30⁴ and observed that the sample demonstrated that standardized templates were used, agreements followed consistent review and approval stages, and the information was tracked in the department's intellectual property information system. The audit team confirmed that the visiting researchers had valid security clearances prior to starting work at AAFC research facilities. As such, the audit determined that the development and approval processes for national research participant agreements are documented and consistently followed.

2.6 INVENTION DISCLOSURE AND PROTECTION DECISIONS

2.6.1 An invention is an application of knowledge that is new (novel), useful, and non-obvious. Under the *Public Servants Inventions Act*, public servants are required to disclose and report inventions developed or conceived while acting within the scope of their employment.

2.6.2 AAFC defined a formal process for employees to disclose inventions which was updated in 2016. It requires inventors to make a disclosure immediately upon invention and prior to any publication to permit an assessment of any potential impact of publication on market potential and protection requirements.

2.6.3 Inventions must be rigorously assessed to determine whether the cost associated with protection is warranted. Intellectual property protection should be sought in a manner that fulfills AAFC's mission and objectives, and preserves the character and economic value of its intellectual property for the benefit of Canada. Intellectual property protection may be necessary to create an incentive for commercial exploitation of a new technology. The decision to formally protect intellectual property is made following its disclosure by an evaluation process. Once a decision to protect intellectual property is made and the form

⁴ Fiscal Years 2016-17 to 2017-18

of protection determined, the assigned Commercialization Officer commences the formal process of filing for the recommended protection.

2.6.4 The audit reviewed a sample of two invention disclosures out of a population of 10⁵ and observed that the sample demonstrated that standard templates were used to document technology assessments and protection decisions. In addition, the information was tracked in the department's intellectual property information system. As such, the audit determined that AAFC has an adequate Invention Disclosure process in place to support the proactive identification and assessment of inventions.

2.7 LICENSE AGREEMENTS

2.7.1 Once science work is completed and ready to be transferred to industry, license agreements are developed between AAFC and the party seeking to use AAFC Intellectual property. There are two types of licenses used by AAFC, either a Technology Transfer License for the transfer of non-plant inventions or a Plant Breeders' Rights License for the transfer of new plant varieties. AAFC must seek the most effective means to transfer any new knowledge and to achieve optimum benefit for Canada.

2.7.2 When licensing new technologies, AAFC seeks proposals from third parties, through both passive (e.g. web site solicitations) and active (e.g. direct mail-outs) means. The proposals received are evaluated by AAFC to determine the third party's expertise and ability to successfully commercialize the technology in a way that will maximize benefit to Canada.

2.7.3 As noted in the Intellectual Property Procedures Handbook, Science and Technology Branch awards Plant Variety Licenses through an annual open Request for Proposal process. The selection of the licensee is based on an assessment of financial stability, market and distribution capabilities, management acumen, and scientific expertise.

2.7.4 The audit reviewed the development and approval processes for a sample of four plant varieties license agreements out of a population of 79⁶. The sampled files showed that the varieties were offered to industry through Request for Proposal process, proposals were evaluated, and decisions were documented. The files demonstrated that standard templates were used, agreements were prepared following consistent review and approval stages, and the information was tracked in the department's Intellectual Property information system. As such, the audit determined that AAFC has adequate processes in place to solicit and evaluate proposals for the use of AAFC IP and prepare license agreements.

⁵ For period of July 1, 2017 to March 31, 2018, to reflect only the most current Invention Disclosure Process.

⁶ Fiscal Years 2016-17 to 2017-18

MONITORING AND REPORTING

Line of Enquiry: Monitoring of active intellectual property agreements and reporting on the overall benefit for Canada was conducted on a regular basis.

Audit Work Conducted: To assess the criterion above, the audit reviewed documentation provided and interviewed Office of Intellectual Property and Commercialization and Science and Technology Branch staff.

2.8 MONITORING OF ACTIVE AGREEMENTS

2.8.1 Ongoing agreement monitoring is conducted by Commercialization Officers and the coordinator of the intellectual property information system. Weekly reports are prepared to track the lifecycle of active agreements and licenses. These monitoring reports outline key information such as the the agreement execution and end date, and the collaborators involved in the agreement. The reports are communicated for information to a set distribution list of interested parties in the Department, including all of the Science and Technology Branch's Directors General.

- **Technology Transfer License Monitoring:** The approach to technology transfer license monitoring was updated in May 2018 to ensure that there is better communication between Finance and Commercialization Officers. A centralized tracking spreadsheet enables an administrative officer to notify Commercialization Officers when licensee royalty statements are due. Commercialization Officers are responsible for verifying the royalty statements to ensure the reasonableness of units sold and accuracy of royalty rate. Finance is responsible for notifying Commercialization Officers when it is time to send an invoice to a licensee.
- **Plant Breeders' Rights License Monitoring:** The audit team observed that there is a documented process for Plant Breeders' Rights monitoring and de-registration. The Office of Intellectual Property and Commercialization monitors the royalty receipts submitted by licensees and assesses the reasonableness of royalty payments. In the event that royalties are less than the cost to maintain protection, the Office of Intellectual Property and Commercialization works with breeders and licensees to coordinate requests for variety de-registration.

2.8.2 As noted in the audit scope in 1.4.2, this audit did not assess the reasonableness of revenues collected as this may be considered in the planned 2020 Audit of the Revenue Control Framework.

2.9 PATENT MONITORING

2.9.1 Interviews with management noted that the Office of Intellectual Property and Commercialization regularly reviews AAFC's patent portfolio. For unencumbered patents

without a licensee, the Office of Intellectual Property and Commercialization arranges for promotion efforts which are tracked in the intellectual property information system. This includes the development of Business Opportunity Documents to promote technologies, creating lists of potential licensees for technologies, and marketing mail-outs to potential licensees. The overall patent portfolio is monitored on a monthly basis for budgeting purposes. When unlicensed patents have upcoming patent-protection fees due, the Office of Intellectual Property and Commercialization weighs the costs of ongoing protection fees versus the projected benefits of continuing to maintain the patent.

2.10 REPORTING

2.10.1 In addition to weekly reporting noted in 2.8.1, the Office of Intellectual Property and Commercialization prepares annual reports that include information on the budget, agreements executed, training, human resources plans, and provides information on ongoing initiatives, issues, and decisions. These reports are shared with the Partnerships and Planning Directorate management within the Science and Technology Branch.

2.10.2 The Office of Intellectual Property and Commercialization has service standards for response times to client inquiries, Collaborative Research and Development Agreement development times, and time to notify successful proponents after the close of a Request for Proposal. These transactional service standards are measured and reported on the AAFC external web site. While AAFC reports on transactional service standards, it does not highlight the impact of its commercialization activities in its reporting.

2.10.3 The three benchmarked science-based departments and agencies monitor and report their intellectual property performance indicators to senior management. None of the organizations benchmarked currently report on the impact of their intellectual property activities (e.g. in terms of jobs created, wealth generated, etc.).

2.10.4 The SBDA Intellectual Property Policy Framework provides examples of benefits that can be measured and reported such as the social, economic, policy and institutional impacts of their intellectual property management practices.

2.10.5 Given its mandate, the Department should consider ways to enhance its reporting on the impact of its intellectual property, in line with the Government of Canada's Results and Delivery agenda. This would demonstrate how AAFC science impacts the Canadian economy and supports industry performance. Without reporting on AAFC's intellectual property activities, Canadians are unaware of the benefits being generated from investments in science.

RECOMMENDATION 2 – PERFORMANCE REPORTING

The Assistant Deputy Minister, Science and Technology Branch should ensure regular reporting is conducted on the impact of its intellectual property activities that feeds into the results and delivery reporting for AAFC.

MANAGEMENT ACTION PLAN AND RESPONSE

Management Response and Action Plan: Agreed.

The performance measurements for intellectual property activities based on the indicators established for the Agri-Science stream of the Canadian Agriculture Partnership will be used to report on intellectual property activities and assets. The report will include elements such as the number of new invention disclosures, new patents, new Plant Breeder's rights, trade secrets and new license agreements. The information included in the report referenced above such as the number of new license agreements are good indicators of the level of uptake of AAFC's Intellectual Property assets by industry.

These metrics are recognized to effectively track a dynamic intellectual property portfolio.

These performance indicators will be shared with the Chief Results and Delivery Officer Corporate Management Branch to inform departmental reporting including reporting on results and delivery for AAFC.

While continuing to balance the benefits of trade secrets, patents and Plant Breeders Rights, Science and Technology Branch will promote success on a regular basis. For instance, Science and Technology Branch Assistant Deputy Minister will promote its Intellectual Property-related successes and new assets in its annual Agriculture Innovation publication.

Lead Responsible: Assistant Deputy Minister, Science and Technology Branch
(Director General, Partnerships and Planning Directorate)

Target Date for Completion: April 2019

ANNEX A: LINES OF ENQUIRY

- **Training and Guidance:** Policies and procedures, training, and awareness activities were in place to support the identification and protection of intellectual property and align with the Intellectual Property Policy Framework for Science-Based Departments and Agencies and Open Science Initiative.
- **Identification, Protection, and Transfer:** Adequate processes and controls were in place for the identification, protection, and transfer of intellectual property for the benefit of Canada.
- **Monitoring and Reporting:** Monitoring of active intellectual property agreements and reporting on the overall benefit for Canada was conducted on a regular basis.

ANNEX B: ACRONYMS

AAFC	Agriculture and Agri-Food Canada
CRDA	Collaborative Research and Development Agreement
SBDA	Science Based Departments and Agencies