



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada



PROCINORTE Canada – Country Update

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Canada 

Background

- Science and Technology Branch (STB) science activities focus on the application of science to agri-based production systems to support an innovative and competitive sector.
- Our approach is based on partnerships:
 - With industry and academia, using the Branch's unique strengths - a national presence and problem-solving mission;
 - Tailoring our approach to sector needs and capacity;
 - Supporting industry science priorities by providing access to internal resources and capacity, leveraged with our connections to universities and program funding for innovation.
 - Program funding for agriculture is delivered primarily through the Department's federal-provincial-territorial policy and program framework, "Growing Forward 2" (GF2).

Science & Technology Branch Strategic Direction

- STB's work aligns to three pillars that emphasize our role in supporting the sector's economic prosperity:
 - Providing science that enhances the sector's resiliency;
 - Fostering new areas of opportunity for the sector; and
 - Supporting sector competitiveness.

- To provide direction and to describe STB activities in a way that reflects how the sector is structured, the Branch has developed science strategies for:
 - Forages and Beef;
 - Cereals and Pulses;
 - Oilseeds;
 - Horticulture;
 - Dairy, Pork, Poultry and Other Livestock;
 - Bioproducts;
 - Agri-Food;
 - Agro-Ecosystem Productivity and Health;
 - Biodiversity and Bioresources.

STB Science Strategies – Development

- The strategies:
 - outline STB’s objectives and focus areas for science activities funded internally, to complement funding provided to industry from innovation programming in GF2;
 - provide a framework for scientists to propose areas of work;
 - inform stakeholders of the role STB will play in relation to and in collaboration with others, including provinces.
- The strategies were informed by “sector maps” which outlined science capacity in Canada (academia, all levels of government, industry) to support the agricultural sector.
- In developing these strategies, STB engaged stakeholders to collect input and feedback on the strategies, including from departmental staff and management, formal and informal discussions across government (federal, provincial, territorial), academia and the private sector.

STB Science Strategies – Strategic Objectives

- Each strategy frames its specific areas of focus within four cross-cutting **strategic objectives**, which represent the major scientific challenges facing 21st century agri-based production systems:
 - Increasing agricultural productivity
 - from both an individual commodity and a systems perspective – e.g. crop rotations, pasture systems
 - Enhancing environmental performance
 - e.g. mitigating GHG emissions
 - Improving attributes for food and non-food uses
 - e.g. nutritional attributes; use of agri-products in pharmaceuticals, bio-chemicals, industrial fibre
 - Addressing threats to the value chain
 - e.g. weeds, insects, disease, safety of production systems



Implementation

- Through the STB business planning process, the science strategies are informing:
 - the process for selecting science projects;
 - the STB Human Resources plan, along with future investment in facilities and infrastructure; and
 - future collaborations with stakeholders, including provinces.

Significant initiatives: Canadian Wheat Alliance

- 11-year commitment among AAFC, University of Saskatchewan, province of Saskatchewan and the National Research Council to support and advance research that will improve the profitability of Canadian wheat producers

- Goals
 - Increase yield on a per acre basis
 - Increase resiliency to climate and disease stresses
 - Short and improve the efficiency of the wheat breeding cycle
 - Reduce nitrogen fertilizer requirements

- Partner Contributions
 - AAFC: breeding, genomics and biotechnology for up to \$4M/year
 - NRC: Genomics and biotechnology for up to \$13M/year
 - U of S: Breeding and genomics for up to \$1.4 M/year
 - SK province: \$5M/year in funding

Significant initiatives: Genomics R&D Initiative (GRDI)

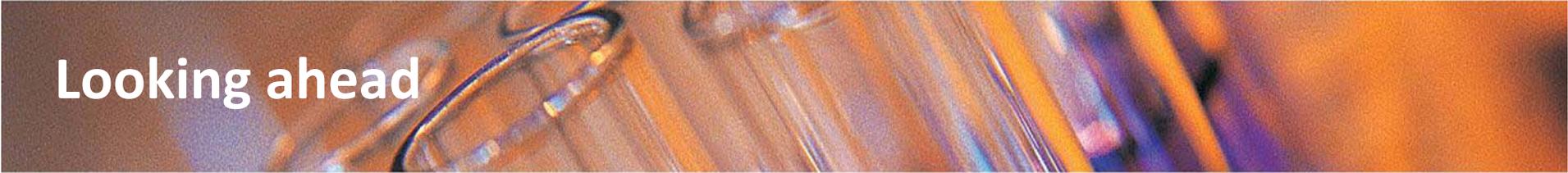
- Established in 1999 by the Government of Canada to:
 - build capacity in federal government laboratories, including AAFC, and
 - support genomics research aligned to legislative, regulatory and policy mandates.
- For 2011-2014, AAFC collaborated on 99 projects in three main areas:
 - addressing biotic and abiotic stress through functional genomics of disease and insect resistance and tolerance to stress such as cold;
 - enhancing quality attributes in cereals, oilseeds and legumes;
 - development of platform technologies.
- AAFC is also a collaborator in two interdepartmental shared priority projects:
 - improved ability to detect, diagnose and monitor organisms to ensure a sustainable supply of safe and healthy food and water for human consumption (coordinated by Environment Canada); and
 - improved ability to detect, identify and understand Canadian biological diversity to prepare for global change (coordinated by AAFC).

Significant initiatives: Pest Management Centre

- In 2013, the PMC celebrated 10 years of achievements for improving farmers' access to newer, safer pesticides and practices that reduce pesticide reliance
- PMC was established to implement the Minor Use Pesticides Program (MUPP) and Pesticide Risk Reduction Program (PRRP).
- Key accomplishments show the benefits PMC provides to Canadians and the environment:
 - Regulatory approval for 1,238 new minor use pesticides and < 220 biopesticides;
 - 950 MUPP projects and 179 PRRP projects;
 - New reduced risk pest management products replace older chemistries as they are phased out;
 - In-house, state-of-the-art analytical laboratory for pesticide residue analysis;
 - Publication and updating of 30 Crop Profiles for use by farmers, registrants, Health Canada's PMRA and AAFC's Canadian Food Inspection Agency – they are the industry standard in identifying pest management challenges and potential solutions for key crops.
 - 175 pest management solutions for organic growers
 - Collaboration with U.S. IR-4 to harmonize pesticide registrations and maximum residue limits for pesticides in Canada and the United States.

Innovation programming is evolving to foster collaboration and enable greater industry leadership

- Mid-90's - government/industry jointly funded, for the first time, collaborative research initiatives.
- 2002-2008 – collaboration extended with programming to support development of sector strategies.
- 2008-2013 – Growing Forward – mobilized sector strategies by providing funding for sector-led research and more complex collaborations (Clusters).
- 2013-2018 – Growing Forward 2 – accelerating pace of innovation and fostering greater industry leadership by increasing investment in Clusters and industry-led science projects.



Looking ahead

- Recognize the need for ongoing engagement to establish and adjust science and technology activities in relation to government and industry priorities.
- Open to new partnership models that contribute to sector prosperity.
- As our new organization continues to take shape, we look forward to further developing our partnerships within IICA.



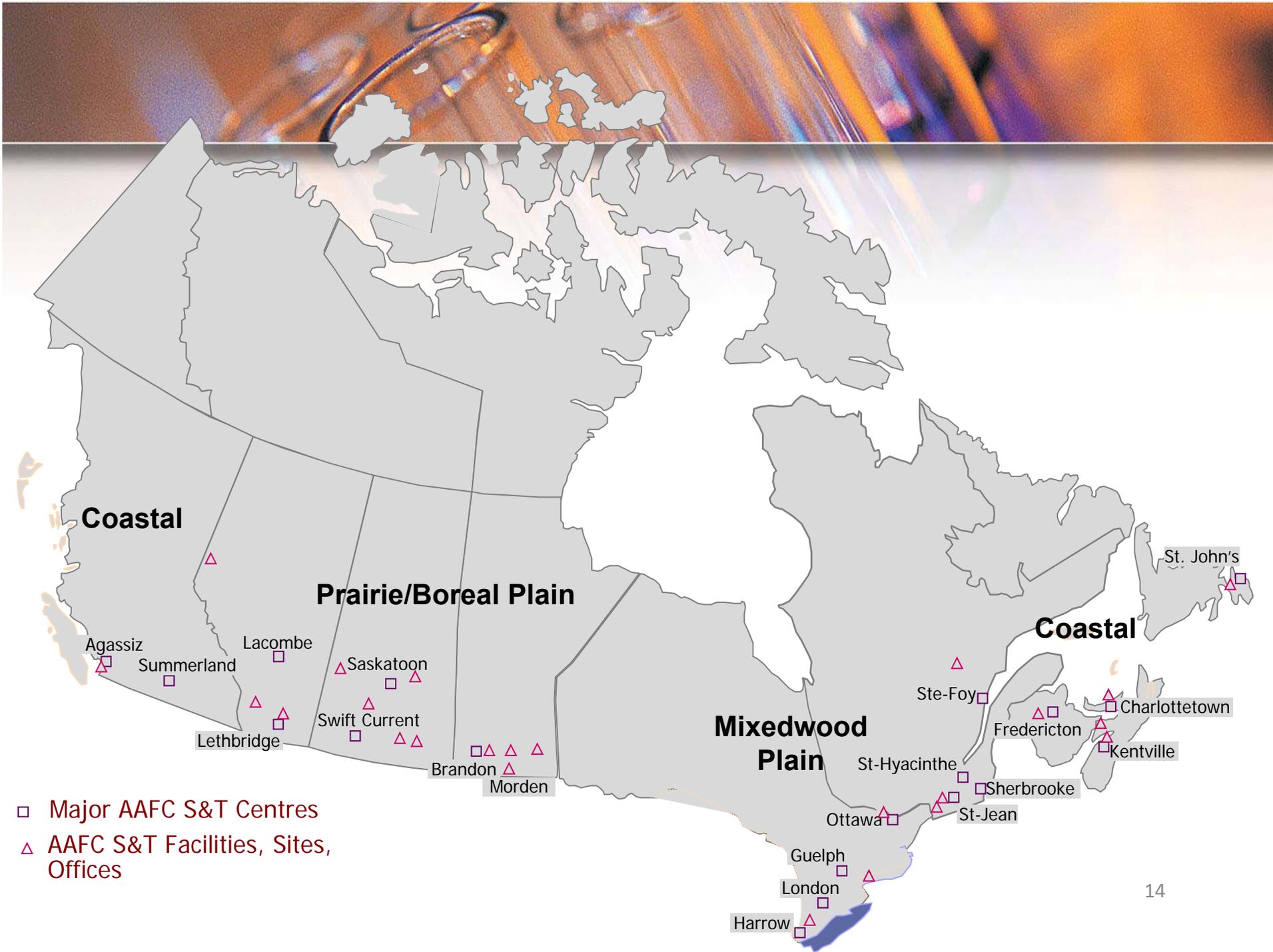
Annex

Growing Forward 2: AgrInnovation Program

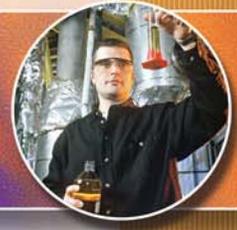
- The federal AgrInnovation Program under GF2 is designed to accelerate the pace of innovation by supporting research and development activities and facilitating the demonstration, commercialization and/or adoption of innovative products, technologies, processes, practices and services.

- Total funding available for the AgrInnovation Program is \$698 million over 5 years (2013-18)
 - \$468 million for funding projects based on applications from farmers and industry
 - Remaining funds will complement industry-directed funding through AAFC-led research, development and knowledge transfer activities, as well as program administration costs

- Reflects a mix of new and continuing activities:
 - far-from-adoption R&D activities to address the sector's emerging science-based requirements to identify and mitigate risks to production, keep pace with sustainability considerations, improve productivity and capture market opportunities
 - enable sector-led pre-commercialization activities, including R&D and piloting projects
 - further support for knowledge transfer
 - extension of R&D and commercialization support that was available under GF
 - new initiatives such as support for demonstration projects to help address a programming gap along the path to commercialization



- Major AAFC S&T Centres
- △ AAFC S&T Facilities, Sites, Offices



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