



Agriculture and Agri-Food Canada (AAFC)

International Research Collaboration on GHG Mitigation

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Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada



- Provide an overview of AAFC Science and Technology Branch
- Outline AAFC's mechanisms for international collaboration
- Share AAFC's experience with collaboration on GHG mitigation and the Global Research Alliance



AAFC Research and Development Centres

20

Research and Development Centres

2195*

Employees

*Includes indeterminate, seasonal, and term over 3 months.

740

Projects in 2018-2019

Scientific Research Development and Technology Transfer (RDT)

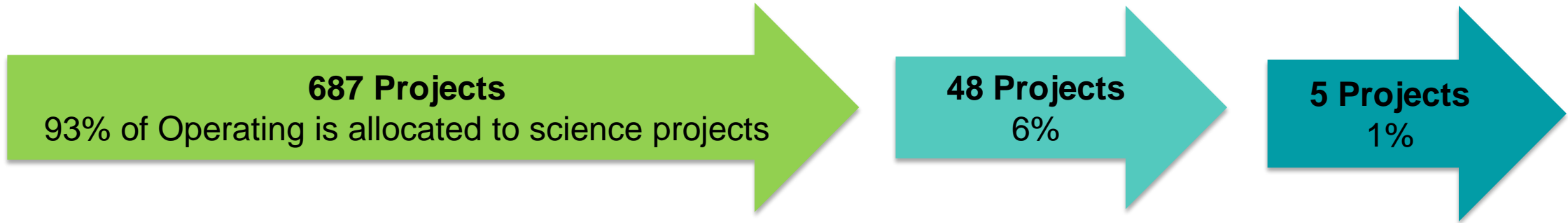
- Coastal Region
- Prairie Region
- Ontario-Quebec Region



Science and Technology Branch Budget 2018-19:

\$258.8M
including

Salary: **\$178.5M**
Operating: **\$70.4M**
Capital: **\$9.9M**



Applied Research →

Development →

Knowledge and Technology Transfer



Upstream
(Discovery Science)

Downstream
(Near Market)

Commercialized Products



Canada recognizes the important role of international partnerships in helping to:

- Build common understanding of issues and solutions;
- Apply broader expertise and resources to complex problems;
- Leverage international science investments; and,
- Strengthen country-to-country relations.

Several types of partnership operating at various scales:

- Bilateral science cooperation with key partner countries
- Global multilateral cooperation (e.g. GRA)

Canada's Primary Interests in Climate Change Research:

- Mitigating greenhouse gas emissions from agricultural fertilizers
- Enhancing C sequestration in agricultural soils
- Developing predictive GHG & C models at regional, national & global scales



Canada employs a variety of mechanisms to explore and enable cooperation:

Workshops and Knowledge Exchanges

Personnel Exchange

Science Networks

Twinned Science Projects

Joint Laboratories

Linked or Parallel calls for proposals



Canada is a founding member, and was chair of the council in 2012-13:

- We continue to participate in the Council and relevant research groups to advance our scientific and technical understanding of agricultural mitigation and related adaptation opportunities
- Co-Chair of the Integrative Research Group and the Conservation Agriculture Network.
- Since 2018, GRA has been identified as an international science co-operation priority in our annual project call.
- Currently there are eleven new and ongoing projects, totalling over \$4.6 M CAD in funding.

The GRA is an important mechanism in our work to promote productive and sustainable agricultural systems.

- For example: Livestock GHG research within AAFC is a small group of researchers, therefore collaboration in this area is of valuable, increasing scientific impact with enhanced access to greater expertise and resources.



Participation has helped advance Canada's agricultural GHG research:

- The Agricultural Greenhouses Program (AGGP) for universities, research institutions and conservation groups to advance research, transfer new technologies, and the adoption of beneficial management practices for GHG mitigation.
 - Focus on: livestock systems, cropping systems, agricultural water use efficiency and agroforestry
 - Five-year \$27 million program - AGGP1 (2010-2016) - 19 projects, AGGP2 (2016-2021) - 20 projects

Agricultural GHG mitigation priority also supports bilateral S&T cooperation with key partner countries:

- Joint Canada-Brazil workshop on Collaborative Studies on Climate Change Research (July 22, 2020), identified the following cooperative projects:
 - Adaptation of 4R nutrient stewardship practices for enhanced efficiency fertilizers in conservation tillage;
 - Influence of agricultural practices on soil microbiome and GHG emissions under agricultural production systems;
 - Simulation and modelling of N and C dynamics;
 - Carbon balance of agricultural production systems, carbon sequestration and stabilization in soils.



Thank you!

