GenomeCanada

CLIMATE-SMART AGRICULTURE AND FOOD SYSTEMS GENOMICS INITIATIVE

Climate change poses a significant risk to our agricultural systems, impacting the availability of food and other vital resources, from fuels to the raw materials used to develop everyday products.

Canada is committed to ambitious action to reduce emissions including in the agriculture sector. New technologies, products and approaches are required to reduce emissions, maintain productivity and competitiveness, and ensure food security at home and abroad.

In response to this major challenge, Genome Canada's latest large-scale genomics initiative will support climate change mitigation and adaptation through strategic investments in climate-smart agriculture and food systems.

Launched in May 2022, the Climate-Smart Agriculture and Food Systems initiative is investing $30M in cutting-edge genomic research and innovation to reduce the carbon footprint of Canada's food production systems—building their resiliency, environmental sustainability and economic viability.

Translating genomics research and innovation into solutions supporting food producers, resilient supply chains and the broader food system

Carbon footprint reduction is achieved through **reduced greenhouse gas emissions, inputs** and **waste**, and by **improving carbon sinks** (anything absorbing more carbon from the atmosphere than it releases).

With laser-focus on strengthening the environmental sustainability and performance of Canadian agriculture and food systems, the Climate-Smart Agriculture and Food Systems initiative will invest in a portfolio of interdisciplinary (fundamental and applied) genomics research projects aimed at achieving these goals. The initiative will connect their efforts with cross-cutting programs to support:

- Knowledge mobilization.
- Coordination and sharing of the data generated by the projects.
- Implementation of genomics solutions.

Complex challenges require strategic solutions delivered by diverse and engaged stakeholders. Coordinating the efforts of a broad range of stakeholders in Canada's genomics ecosystem around this shared challenge will create significant beneficial impacts for all Canadians.

05/2022

Reducing the carbon footprint of Canadian agriculture and food production

Our new challenge will fund a **portfolio of interdisciplinary genomics research and innovation projects**. We will also support cross-cutting programs designed to increase portfolio value and optimal delivery of knowledge mobilization, data coordination and implementation across Canada. A portfolio approach allows benefits from one solution to translate into other production systems or supply chains and cascade impact throughout the broader national food system.

NET-ZERO CARBON AGRICULTURE AND FOOD SYSTEMS

Reducing greenhouse gas emissions and the carbon footprints of food production and inputs manufacturing.

BIOLOGICAL CARBON SEQUESTRATION

Enhancing carbon sequestration to improve performance, mitigate climate impacts and support healthy ecosystems.

RESILIENT AND SUSTAINABLE FOOD SYSTEMS

Building resilient, sustainable food systems that reduce environmental impacts and greenhouse gas emissions.

SCALABLE BIOLOGY-BASED SOLUTIONS

Resulting in novel, nature-based solutions and processes that can replace traditional consumptive production processes with sustainable and circular solutions for the environment and economy.

Programs within the initiative

Three programs will drive the Climate-Smart Agriculture and Food Systems initiative

INTERDISCIPLINARY CHALLENGE TEAMS (ICT) (APPROX. $24M)

Teams of researchers and receptors addressing specific questions that will deliver innovative genomics solutions that support climate change mitigation and action

KNOWLEDGE MOBILIZATION AND IMPLEMENTATION COORDINATION CENTRE (APPROX. $2M)

Cross-cutting funding to develop and implement a plan to coordinate knowledge mobilization strategies and support portfolio-level GE^{3}LS research and genomics in society activities

DATA COORDINATION CENTRE (APPROX. $4M)

Cross-cutting funding to develop and implement a portfolio-level plan to coordinate data assets, standards and analytics across ICTs

By the numbers

$30M
in federal investment through Genome Canada to launch the initiative

$24M
for interdisciplinary research teams delivering genomics solutions for climate change mitigation and action

$4M
for data coordination

$2M
for knowledge mobilization and implementation

$3M
maximum contribution by Genome Canada to any single project, and $1M minimum

At least 1:1
co-funding ratio for each Genome Canada-led project, doubling investment

Key dates

MAY 12 2022: First funding opportunity announced, registration begins

EARLY JULY 2022: Registration deadline*

MID-SEP. 2022: Letter of intent (LOI) deadline*

EARLY NOV. 2022: LOI results released, applications begin

MID-JAN. 2023: Application deadline*

MARCH 2023: Application notification of decisions released

MAY 2023: Teams convene

*see your Genome Centre for your deadline

Questions? Please contact us at climateaction@genomecanada.ca. For application-specific questions, contact your Genome Centre.

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