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# The Canadian Agroecosystem Living Labs Network as a Regional Participatory Research Process



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## **Urgent Action Is Needed**

AAFC recognized that urgent action is needed to accelerate our response to climate change and other agri-environmental challenges.

Starting 2018, AAFC launched a nationwide network of living labs to help accelerate the development and adoption of sustainable practices and technologies by Canadian farmers.









# Why Living Labs?

The living lab approach to agricultural innovation:

- brings together farmers, scientists and other partners to co-develop solutions
- helps refine these solutions so that they are more likely to be adopted.



# **3 Core Principles of Living Labs**



### **User-centred innovation**

Activities focus on the users' needs and users are involved throughout the development process





### Working in partnership

Experts from various disciplines and backgrounds tackle a common issue





### **Real-life context**

Testing takes place where the users would actually use the technology or practice



## The Living Lab Innovation Cycle

**Co-Develop** 

Identify needs and outcomes, generate and share ideas



### Test

Conduct experiments, acquire new data, explore and develop new knowledge

### **Evaluate**

Take stock of the results, including all types of data and user experiences

## **Iterative Cycles of Improvement**



## **Living Laboratories Initiative**

Starting in 2018, this initiative has been building a nation-wide network of living labs to help the sector:

- Adjust to climate change
- Reduce water contamination
- Improve soil and water conservation
- Maximize habitat capacity and biodiversity

The goal is to accelerate the development and adoption of sustainable practices and technologies by Canadian farmers.



agriculture.canada.ca/living-lab



### **Living Labs**

- Started 2021 and runs until 2031
- \$185 million for living lab projects
- Co-development, experimentation and accelerated adoption of BMPs that store carbon and reduce greenhouse gases

### **On-Farm Climate Action Fund**

- Starts this year and runs until 2024
- \$200 million for direct support to farmers to adopt BMPs that store carbon and reduce greenhouse gases
- Three target areas: cover cropping, nitrogen management, and rotational grazing practices

### agriculture.canada.ca/agricultural-climate-solutions

# **Two Programs: One Living Lab Approach**

#### Living Laboratories Initiative

- Living labs in 4 regions (PEI, MB, ON, QC)
- Focused on agro-environmental issues

#### **Agricultural Climate Solutions**

- Living labs in each of the 10 provinces
- Focused on carbon sequestration, reducing GHG emissions, and providing other environmental co-benefits



#### Both programs follow the same living lab approach

### A Network of 13 Living Labs



## **Examples of Activities**

Many of the activities will include a focus on:

- crop rotations and cropping systems
- land use changes
- pasture and forage management
- feeding strategies
- nutrient and pesticide management
- fertilizer use optimization
- soil health enhancement
- restoration and enhancement of perennials



## **Agroecosystem Living labs**

#### G20 Meeting of Chief Agricultural Scientists 2018

Canada presented the "agroecosystem living lab" as a promising approach to fostering more widespread and rapid adoption of sustainable practices and technologies.



#### The Defining Characteristics of Agroecosystem Living Labs

McPhee, C.; Bancerz, M.; Mambrini-Doudet, M.; Chrétien, F.; Huyghe, C.; Gracia-Garza, J. 2021. *Sustainability*, 13, 1718.

#### https://doi.org/10.3390/su13041718





Sustainability 2021. 13. 1718. https://doi.org/10.3390/su13041718

# **Canadian Agroecosystem Living Lab Network**



A network of working groups to identify, share, and promote collaborative research and partnerships across our living labs and beyond.

#### **Agri-environmental Working Groups**

- 1. Soil Health
- 2. Water
- 3. Agrometeorology
- 4. Biodiversity
- 5. Crop Health and Productivity

#### **Cross-Cutting Working Groups**

- 1. Modelling and Geomatics
- 2. Data Integration
- 3. Socio-Economics
- 4. Innovation and Knowledge

# **AAFC's International Collaborations**



G20: Co-led G20 MACS working group on agroecosystem living labs



#### **European Commission:**

- ALL-Ready project on agroecology living labs and research infrastructures
- SOILL framework partnership for 100 living labs and lighthouses for soil health



France: Ongoing collaborations with INRAE about our respective living lab programs



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**ENoLL:** Ongoing collaborations and working group membership

# Coming October 4 to 6, 2023

## International Forum on Agroecosystem Living Labs

Part of the Adaptation Futures Conference

- Palais des congrès de Montréal, Québec
- Co-hosted by AAFC and INRAE





## **For More Information**







agriculture.canada.ca/agricultural-climate-solutions

# Thank you

