Moving Forward with Living Labs

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What is a Living Lab?

A living lab is an integrated approach to agricultural innovation that **brings farmers, researchers, and other partners together** to co-develop, test and monitor beneficial management practices (BMPs) and new technologies in a real-life context.

Goal: To accelerate the development and adoption of practical technologies and sustainable farming practices by Canadian farmers.

Three Core Principles

Focusing on farmers' needs

Producer-centric approach, hands on at every step of the project - from design to implementation

Broad and diverse partnerships

Experts from various disciplines and backgrounds tackle a common challenge

Testing in the real-life context

Testing takes place on Island farms where the producer would actually use the technology or practice

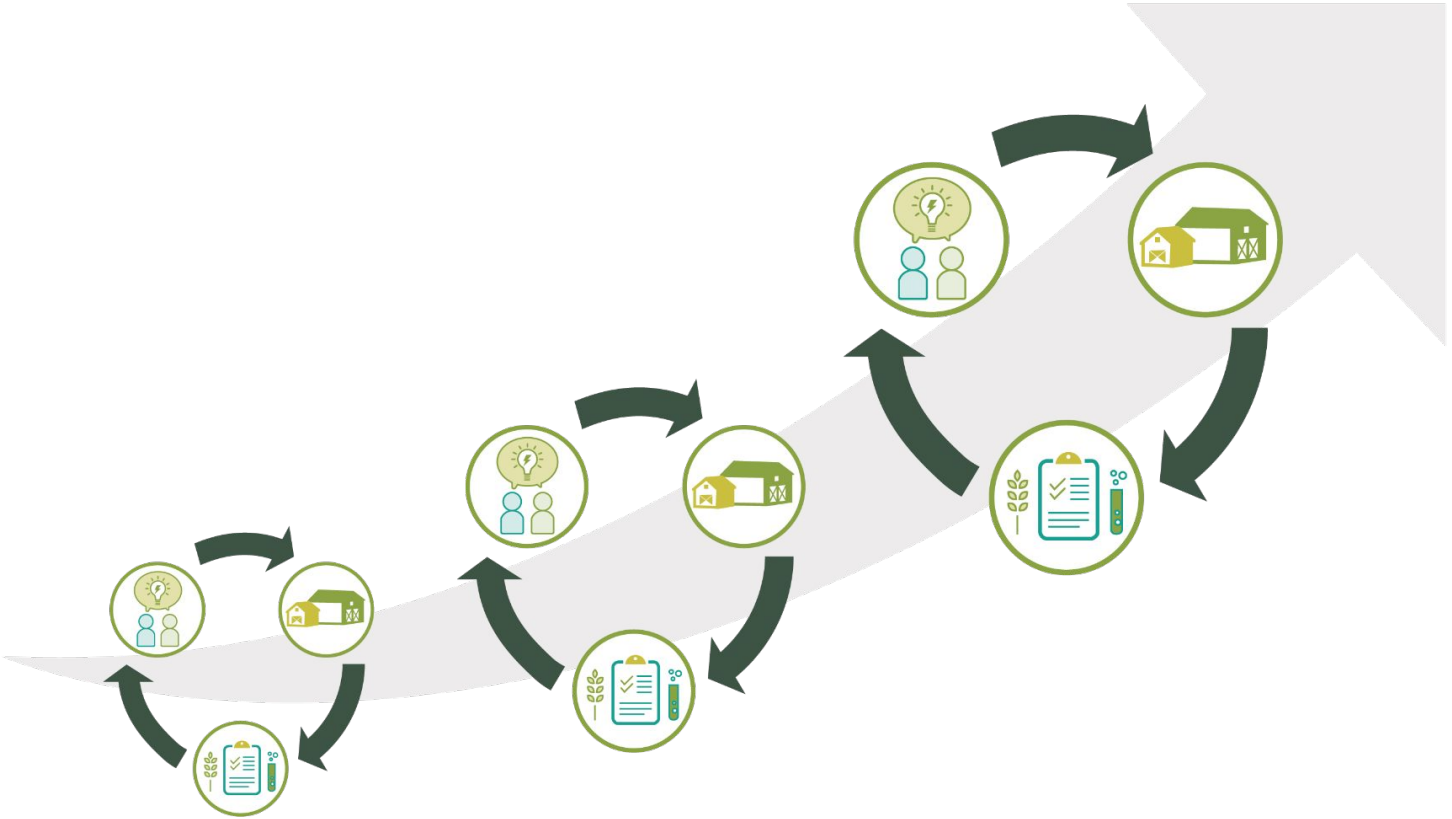
The Living Lab Innovation Cycle

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 producer experiences

We repeat the cycle each year of the project.



Living Lab - Atlantic

8 BMPs co-developed

Island farmers selected practices to improve soil health and water quality

14 research partners

Watershed groups, research agronomists, Maritime universities, provincial government, AAFC scientists

128 fields participated in trials

Tested cover crops, soil-building rotation crops, nurse crops, enhanced efficiency N fertilizers, supplemental irrigation strategies

GENESIS

CROP SYSTEMS INC

Prince Edward Island
CANADA
Agriculture and Land

Prince Edward Island
CANADA
Environment, Energy and Climate Action

Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Environment and Climate Change Canada | Environnement et Changement climatique Canada

Fisheries and Oceans Canada | Pêches et Océans Canada

UNIVERSITY of Prince Edward ISLAND

DALHOUSIE UNIVERSITY

ST. FRANCIS XAVIER UNIVERSITY


SUCCESS STORIES

Success Story: Adoption of Cover Crops

In 2019, PEI Potato Board survey responses indicated 40% of acres with cover crop after potatoes, 24% with cover crop before potatoes.

In 2022, responses indicated **51% (+11%)** of acres with cover crop after potatoes, **49% (+25%)** with cover crop before potatoes.

Living Lab trial results have shown a ~**7% yield increase for cover crop before potatoes.**

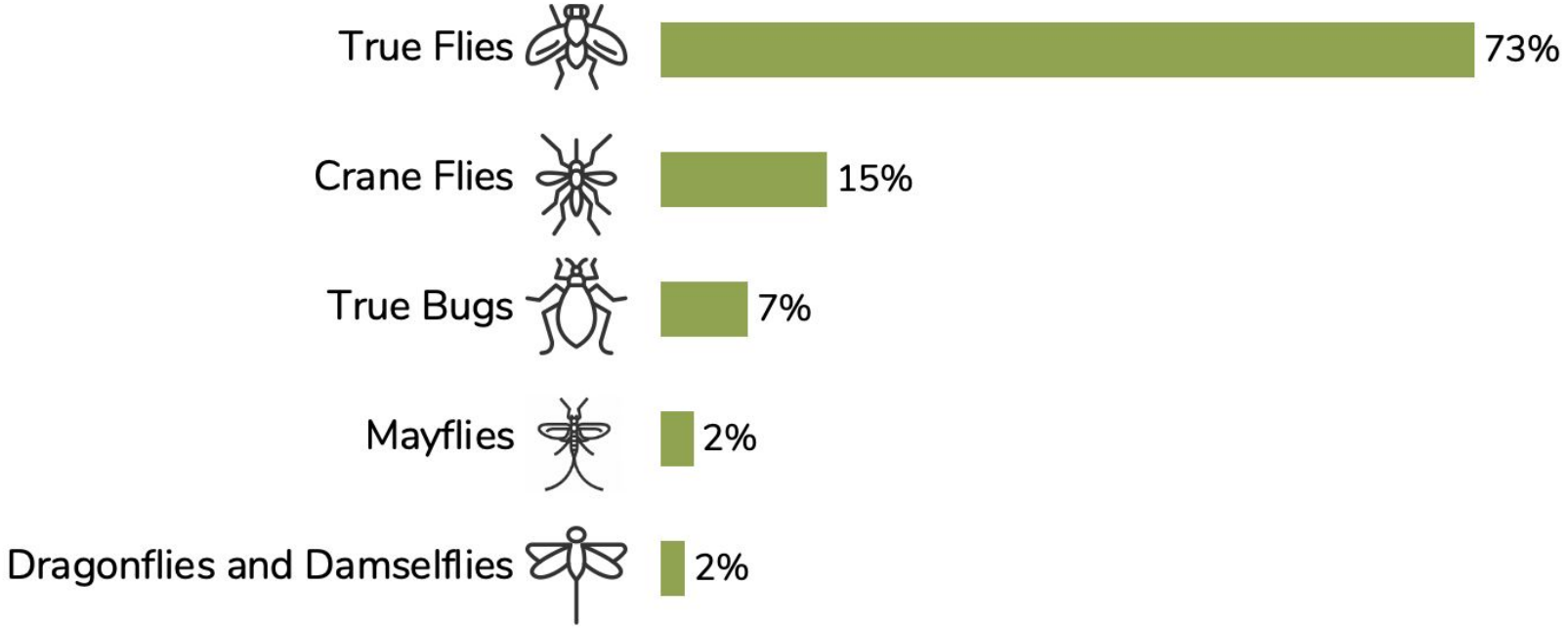
Photo: Jake MacKinnon, Souris Wildlife

Success Story: Field Edge Wetlands

- Ponds minimized surface flow of excess soil nutrients into nearby watercourses and improved water quality.
- Sites enhanced local biodiversity by providing habitat.
  - Leopard frogs, spring peepers (adults and tadpoles) present.
  - Aquatic insect surveys: Midges, dragonflies and damselflies, mayflies, craneflies and boatmen.

Souris Wildlife oversaw the construction of two new wetlands in collaboration with Townshend Potato Co., Rollo Bay Holdings, Ducks Unlimited, and the PEI Watershed Alliance.

Proportional diversity of insects at the Kickham site



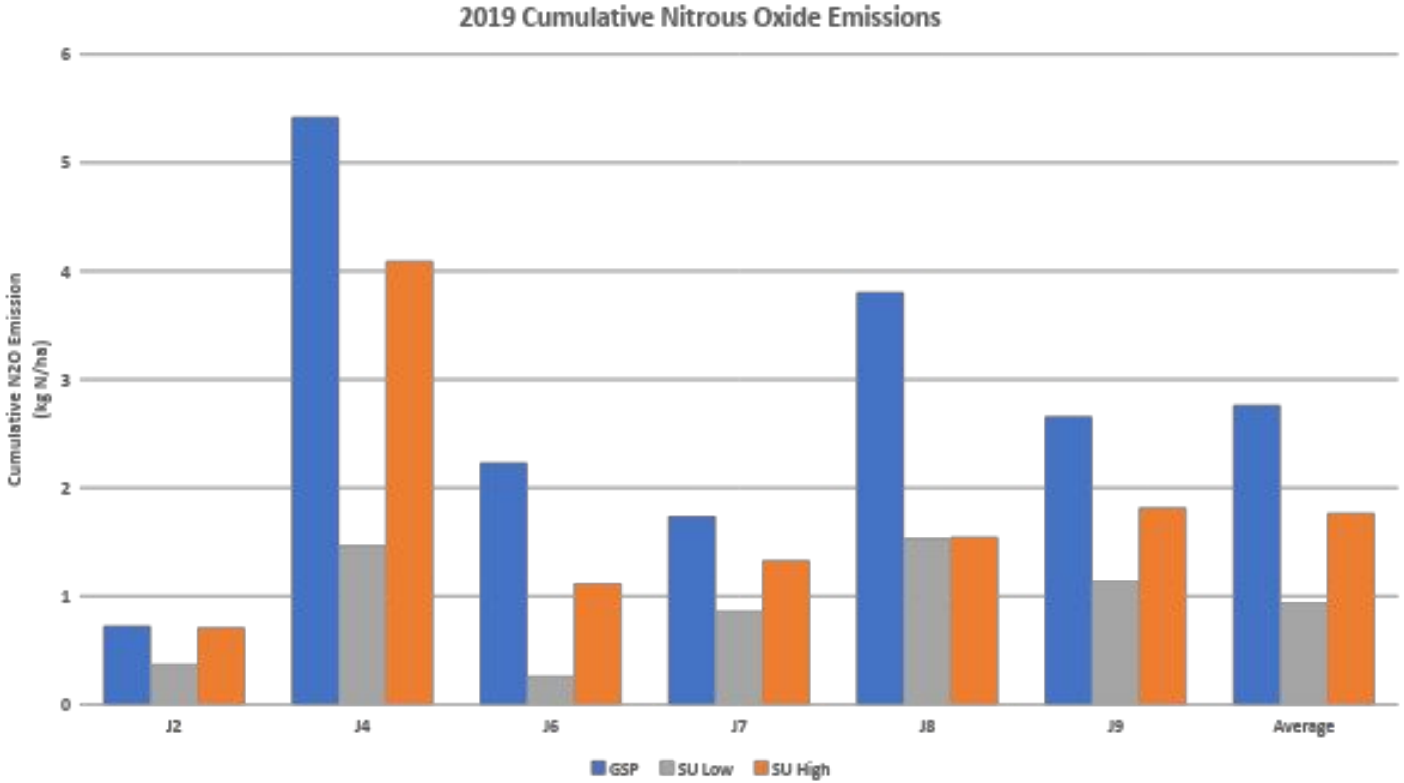
Preliminary aquatic survey results provided by Souris Wildlife.

Success Story: Enhanced Efficiency Nitrogen Fertilizers

- Do enhanced efficiency nitrogen products (Super U) have a place in improving potato yields and reducing environmental impacts in PEI potato production?
- **Results demonstrated a 60-71% reduction in nitrous oxide emissions.**
- No yield penalty with a reduction in total nitrogen.

Three-year project led by Steve Watts, Genesis Crop Systems Inc.

LL BMP 7 N2O Emissions - 2019



STAT DIFF 6/6 Avg 66%

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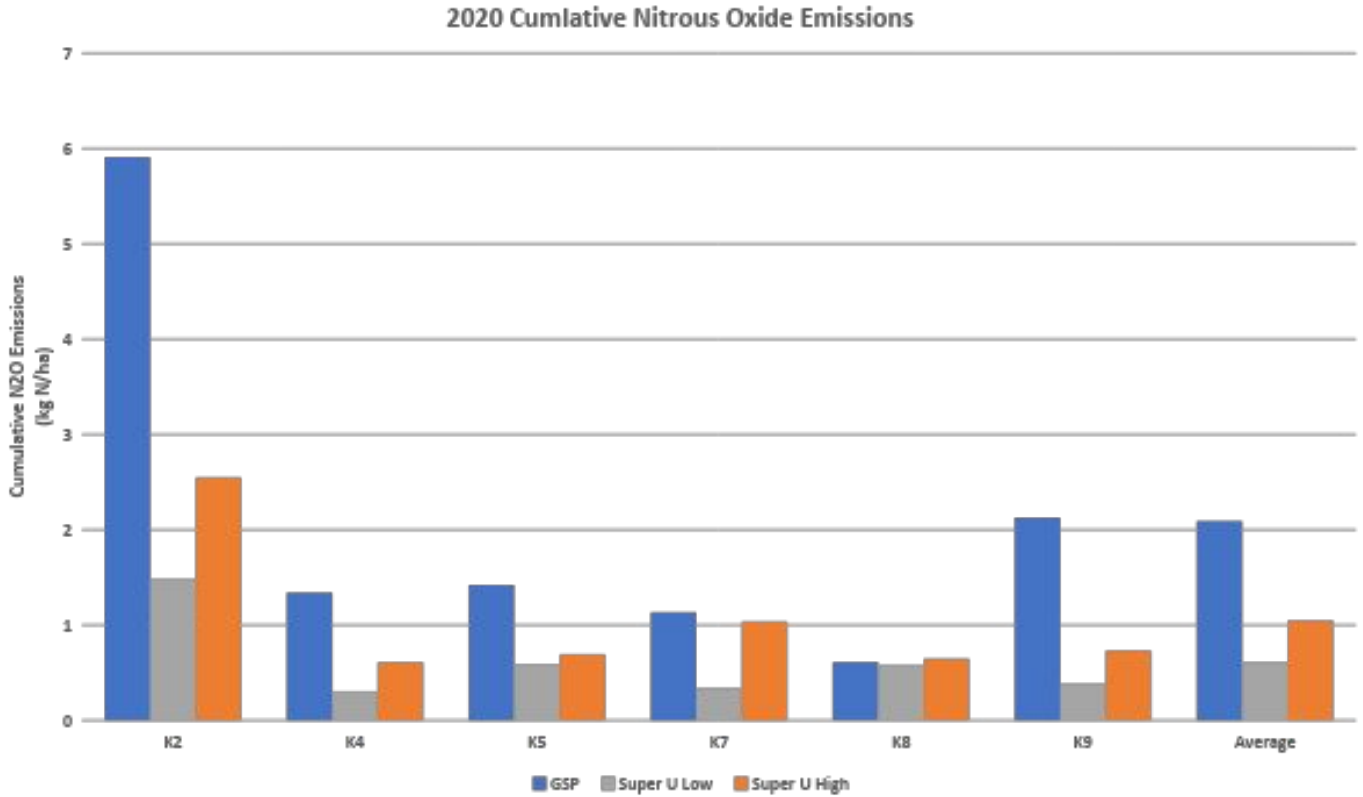
LL BMP 7 N2O Emissions - 2020



STAT DIFF 4/6 Numerical in Rest Avg 71%

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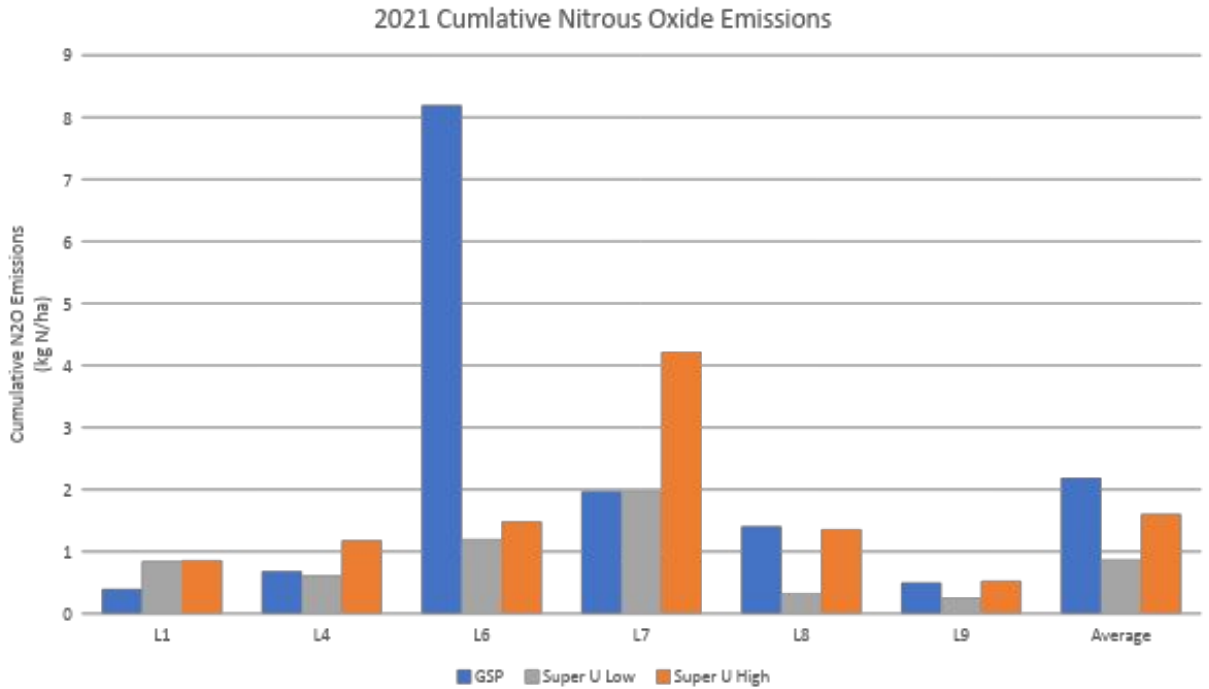
LL BMP 7 N2O Emissions - 2021



STAT DIFF 2/6 Numerical in Rest Avg 60%

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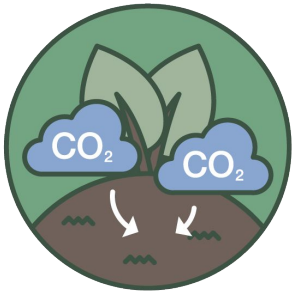
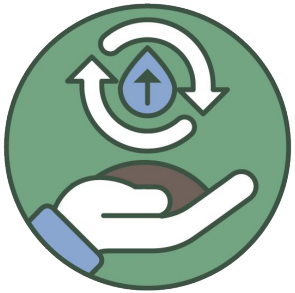
AGRICULTURAL CLIMATE SOLUTIONS

The proposed project will lead to the development and use of BMPs to:



Sequester carbon

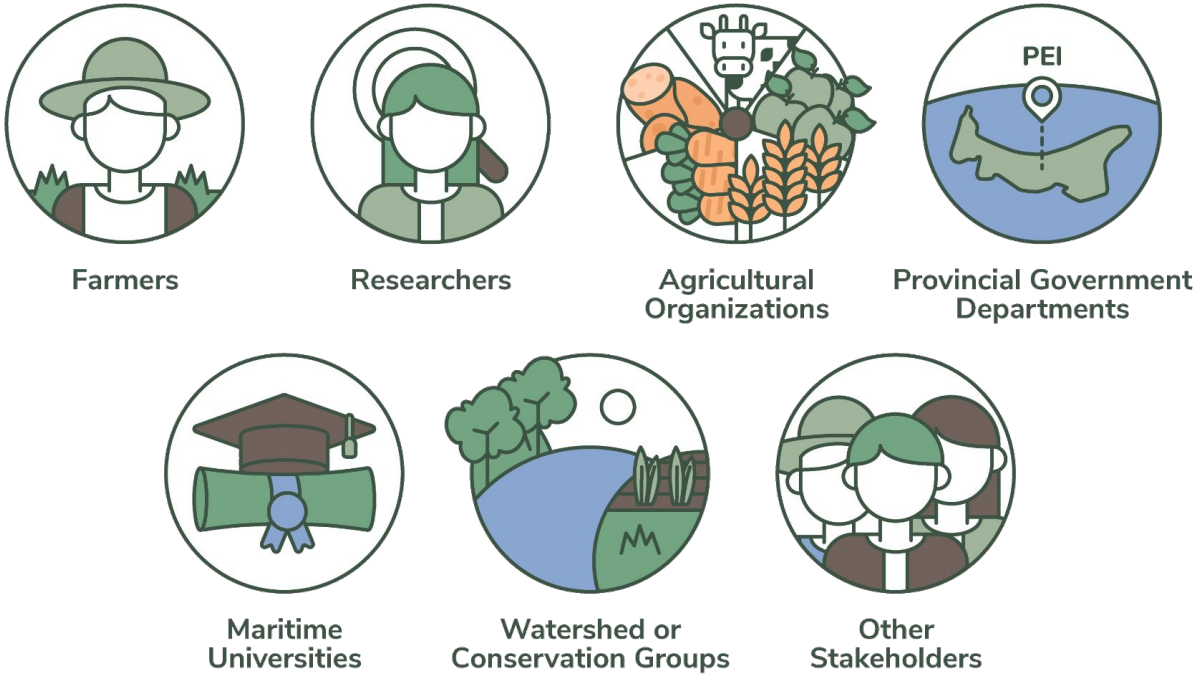
Mitigate greenhouse gas emissions



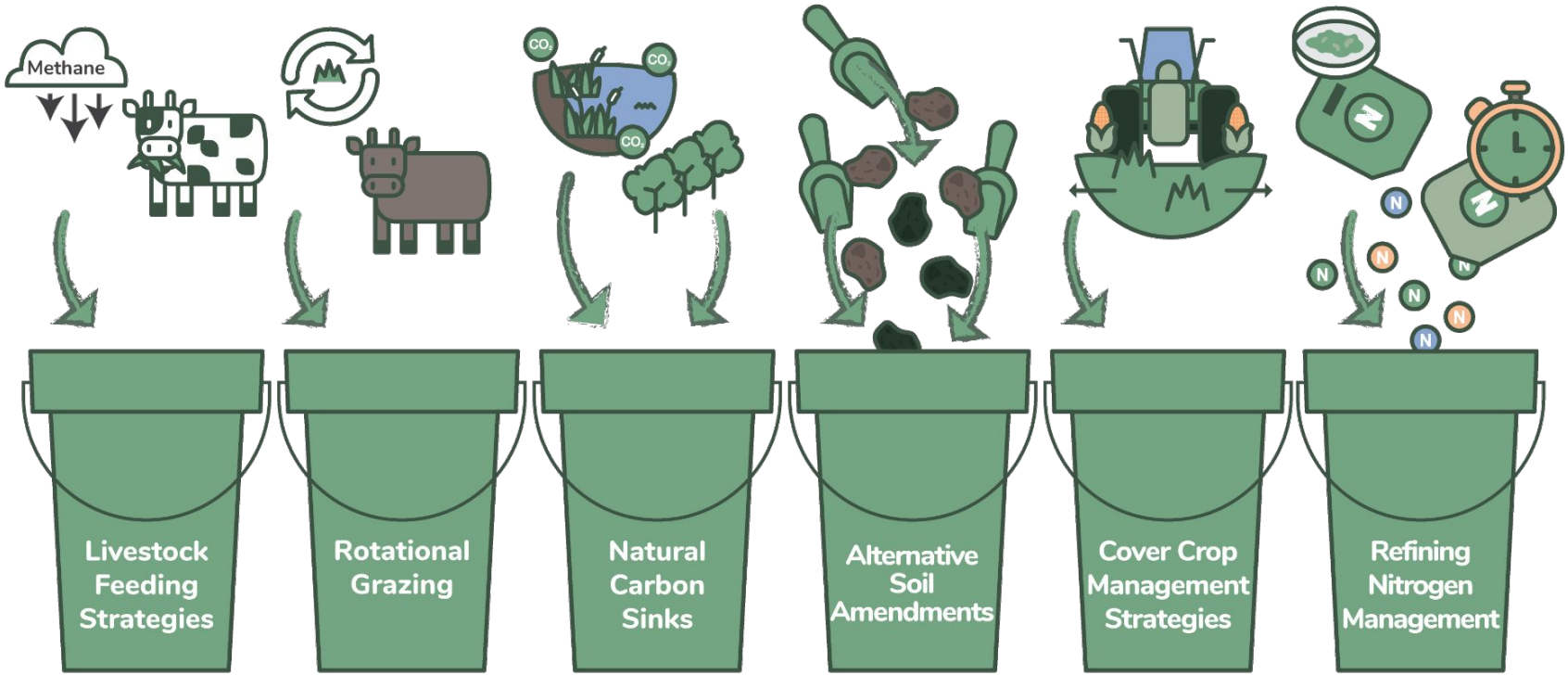
Improve soil health and water quality

Support biodiversity

The project brings together a **team of 27 partners** including:



The project focuses on **6 areas of research:**



This work will be supported by:

Awareness, engagement and knowledge transfer activities

Field tours, regional producer meetings, factsheets, social media

Socio-economic analyses

Understand barriers and incentives to practice adoption

Implementation of digital agriculture tools

SWAT MAPS, drone and satellite imagery

We want you!

- This is a five-year project set to begin in spring 2023.
- We are **looking for beef, dairy, and crop producers** interested in validating how the proposed BMPs and technologies improve productivity, profitability, and/or the environment.

What's in it for producers?

- Opportunity to try something new or adapt an existing practice
- Personalized support and expertise for implementation
- Technical data (soil mapping, C sequestration, GHGs, etc.)

Interested in learning more?

Contact us via email at
eastprinceassociation@gmail.com