

Amidst an Escalating Trade War and Supply Chain Disruptions, Greenhouse Innovation Is Key to Food Security in Canada

By [Charles Conteh](#) Reading Time: 5 minutes

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Food security is becoming a major national issue in Canada. Canadians are increasingly concerned about food affordability, geopolitical uncertainty, supply chain disruptions, climate change, and our capacity to produce food domestically. Greenhouse production is playing a critical role in Canada's year-round supply of fresh vegetables and other food products.

I recently led a study on Greenhouse Innovation Ecosystems with my colleagues at Brock University, Martha Barnes and Carol Phillips. Our research's key message is simple: food security is not just about growing more food. It is also about building the innovation systems that help producers adopt new technologies, improve productivity, respond to supply chain disruptions and environmental challenges, while remaining globally competitive.

As an exploratory case study, our project examined the network of organizations, researchers, governments, industry associations, and technology providers that support greenhouse innovation in Southern Ontario. We found that these connections are essential to translating new ideas into practical solutions that growers can use. As Canada looks for ways to strengthen food security and resilience, investing in and better coordinating these innovation networks may be just as important as investing in production itself. If food security is a national priority, then greenhouse innovation must be a national priority too.

Innovation Does Not Happen Alone

When people think about agricultural innovation, they often imagine scientists developing breakthrough technologies or entrepreneurs creating new products.

But innovation rarely succeeds through a single organization's efforts. Instead, it emerges from collaboration among many different players.

In the greenhouse sector, growers face challenges ranging from rising production costs and labour shortages to environmental pressures and increasing protectionism from the country's closest trading partner. Meeting these challenges requires support from researchers, technology developers, government agencies, industry associations, investors, and business advisors.

This is where intermediary organizations become critically important.

These organizations act as connectors across the innovation ecosystem. They help businesses access research expertise, secure funding, test new technologies, build partnerships, and navigate the often-complicated path from idea to commercialization. In many respects, they are the organizations that make innovation possible.

Mapping Southern Ontario's Greenhouse Innovation Ecosystem

To better understand how this ecosystem functions, we used social network analysis to map relationships among organizations involved in greenhouse innovation across Southern Ontario. The results revealed a surprisingly rich and diverse network.

One of the most interesting findings was that no single organization dominates the system. Instead, a broad constellation of actors provides innovation support, including the private sector, public institutions, nonprofits, research centres, colleges, universities, and hybrid organizations.

This diversity is a strength because it brings together different types of expertise and resources. At the same time, it creates challenges around coordination and communication, especially when organizations operate independently rather than as part of a fully integrated system.

What Is Working Well?

Southern Ontario's greenhouse innovation ecosystem has a lot to celebrate.

Our interviews revealed growers' willingness to adopt new technologies. The region benefits from excellent research capacity, highly skilled talent, specialized facilities, and organizations with deep technical expertise.

Intermediary organizations play a particularly valuable role by helping businesses reduce risk. Through pilot projects, testing environments, validation services, mentorship programs, and funding support, they make it easier for growers and entrepreneurs to experiment with new technologies and bring innovations to market.

Digital technologies are also expanding opportunities across the ecosystem. Data analytics, online training, virtual collaboration tools, and digital innovation platforms are making it easier to share knowledge, connect partners, and scale new solutions.

What Needs Improvement?

Despite its strengths, the ecosystem faces several challenges.

Funding instability emerged as one of the most frequently cited concerns. Many organizations depend heavily on government funding, but short funding cycles often make long-term planning difficult. Interview participants also noted that funding timelines do not always align with agricultural production cycles or the realities of technology development.

Another challenge is fragmentation. Because multiple organizations perform intermediary functions, businesses sometimes struggle to identify the right supports or navigate the available programs and services. Research and innovation activities can also become siloed across disciplines, institutions, or commodities.

Participants also highlighted issues involving commercialization, intellectual property, regulatory complexity, and barriers faced by entrepreneurs from underrepresented communities. While the ecosystem is rich in expertise and resources, access to opportunities is not always equal.

Why This Matters for Canada's Future

The policy brief is not simply a study of greenhouse innovation. It is a timely contribution to Canada's growing conversation about food security, economic resilience, and domestic food production capacity at a time of heightened geopolitical uncertainty, trade protectionism and supply chain disruptions.

Our central finding is that food security is no longer just about farmers and food production. It is increasingly about innovation networks. Canada's greenhouse sector depends on a complex ecosystem of research institutions, governments, industry associations, technology providers, and intermediary organizations that help new technologies move from development to adoption.

The encouraging news is that the building blocks for success already exist. Our Southern Ontario case study shows the region has world-class expertise, strong industry participation, innovative growers, and a robust network of support organizations. What is needed now is stronger coordination, more stable funding, greater collaboration, and a shared vision for the future.

As Canada confronts rising food costs, climate pressures, and growing concerns about domestic food production, greenhouse innovation will become increasingly important and urgent. Strengthening the networks that support innovation can help producers become more productive, sustainable, and competitive.

In the end, investing in greenhouse innovation is not simply an agricultural strategy. It is a food security strategy. It is an economic resilience strategy. And it is an investment in Canada's capacity to feed itself in an increasingly uncertain world.

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