

Harnessing Innovation:

A DIGITAL AGRICULTURE STRATEGY FOR NEW BRUNSWICK



THE AGRICULTURAL ALLIANCE
OF NEW BRUNSWICK

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Launching New Brunswick's Digital Agriculture Strategy: A Roadmap for Growth and Innovation

On behalf of the Agricultural Alliance of New Brunswick, we are pleased to introduce *Harnessing Innovation: A Digital Agriculture Strategy for New Brunswick* — a roadmap to accelerate the adoption of digital tools and smart food production solutions across our province.

This strategy builds on the July 2024 report *The Future of Digital Agriculture in New Brunswick: Opportunities and Challenges* recognizing that technology, innovation, and data-driven decision-making are essential to sustainable growth. As we face challenges in workforce shortages, land access, infrastructure gaps, and climate resilience, digital agriculture can provide practical, scalable solutions to enhance productivity, optimize resource management, and drive economic growth.

By investing in precision farming, AI-driven analytics, automation, and enhanced connectivity, we can equip New Brunswick food producers with the tools they need to remain competitive in an increasingly digital global food system.

Agriculture today is more than just the food on our plates; it underpins a thriving food, fuel, and fibre economy. Our producers grow nutritious crops, cultivate biomass for renewable fuels, and supply materials for textiles and industry. By leveraging digital innovation, we can unlock the full potential of this sector—not only as food producers, but as stewards of a broader bioeconomy.

The Digital Agriculture Strategy provides a practical, technology-driven action plan to ensure that our food producers, agribusinesses, and communities have access to the digital tools they need to thrive.

To successfully implement this strategy, we must work together. Producers, industry leaders, policymakers, and researchers all have a role to play in building a digitally enabled agricultural sector.

New Brunswick's agricultural sector is resilient, innovative, and deeply rooted in our communities. By embracing digital transformation, we can ensure that our food producers remain competitive, our food systems are more sustainable, and our province is positioned as a leader in smart, climate-smart, and technology-driven agriculture.

Joel Lamarche
Chair



Anna Belliveau
Chief Executive Officer

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Executive Summary

New Brunswick's agricultural sector is at a pivotal moment. Global advances in digital technology are transforming food production, offering solutions to improve productivity, sustainability, and economic resilience. However, the province has yet to fully capitalize on the potential of digital agriculture, and there is an urgent need to accelerate adoption to remain competitive in local, regional, and international markets.

Despite clear benefits, adoption remains uneven -- held back by limited infrastructure, high adoption costs, workforce shortages, and a lack of practical awareness. Even when technologies are known, uncertainty around return on investment and inadequate support for implementation can prevent adoption. These impediments must be addressed to ensure the sector is equipped to compete and thrive in a digitally driven global food economy.

The New Brunswick Digital Agriculture Strategy provides a coordinated, evidence-based roadmap to accelerate the integration of digital tools across the province's agricultural sector. Developed through extensive stakeholder engagement, this strategy is designed to ensure that food producers, agribusinesses, and researchers have access to the technology, training, and support needed to thrive in an increasingly data-driven industry. Roundtable discussions, targeted interviews, and sector-wide surveys helped surface the shared needs and systemic barriers experienced across different types of food production enterprises.

Through this collaborative process, five key priority areas emerged as critical levers to enable meaningful digital transformation:



Technology Adoption, Infrastructure, and Knowledge Transfer



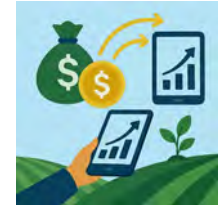
Data Governance, Security, and Trust



Workforce Development and Training



Innovation, Research, and Industry Collaboration



Financial Incentives and Economic Growth

These priority areas reflect both foundational needs (such as broadband and data literacy) and forward-looking opportunities (such as precision agriculture and smart automation). Together, they form the structure of a strategy designed to be inclusive, practical, and adaptive to a rapidly evolving digital landscape.

This strategy recognizes that digital agriculture is not just a technological shift —it is an economic and environmental imperative. By investing in precision farming, AI-driven analytics, automation, and enhanced connectivity, New Brunswick can strengthen its competitiveness of its food production enterprises while addressing pressing challenges such as climate change, labor shortages, and market access.

In keeping with a more holistic and modern understanding of the sector, this report often uses terms such as food production systems, food production enterprises, and the food production sector rather than traditional references to farms or farming. This intentional shift reflects the diverse and evolving nature of food production in New Brunswick — encompassing not only primary producers, but also value-added processors, agri-tech innovators, renewable resource contributors, and others who make up the broader food, fuel, and fibre economy.

Why Digital Agriculture?

Digital agriculture offers proven, measurable returns. Across a range of technologies, farmers around the world—and increasingly in Canada—are seeing tangible improvements in both productivity and profitability. Yield increases of approximately 5 to 15% are frequently reported by producers who adopt tools like precision mapping, automation, and smart irrigation systems. In some cases, such as soil mapping, yield gains can be even higher. Meanwhile, input cost savings including reductions in water, fuel, fertilizer, and chemical use typically range from 10% to 30% through more targeted application.

Even when the immediate boost in profit margins is relatively modest, digital tools offer significant advantages: better decision-making, lower risk, improved product quality, and more sustainable environmental practices. These benefits, backed by both Canadian and international experience, make a compelling case for strategic investment. At scale, digital technologies enhance farm profitability, resource efficiency, and the long-term resilience of agriculture as a whole¹.

While the focus is often on how digital technologies and related data collection can improve the process of growing food, digitization also has the potential to enhance efficiency and generate valuable insights across the broader agri-food value chain -- including the processing, transportation, marketing and retail stages. These later stages in the production cycle are equally important considerations in any digital agriculture strategy. In addition, the collection and analyses of consumer data – such as purchasing patterns, demand trends, and perceptions of environmental impact – are essential to aligning production with market needs and strengthening public trust in the sector. Integrating these insights can support more responsive supply chains and a more transparent, sustainable food system.

Embracing digital agriculture will provide significant benefits, including:

- Increased efficiency – Smarter resource management, higher productivity, and cost reductions.
- Enhanced sustainability – Reduced water usage, fertilizer waste, and carbon emissions through precision agriculture.
- A stronger workforce – Digital training programs to equip food producers and agribusiness professionals with critical skills.
- Greater market competitiveness – AI-driven logistics, traceability, and data-backed strategies to support local and export market growth.
- Economic resilience – Public and private sector investments to drive long-term innovation and profitability.

¹ <https://www.sciencedirect.com/science/article/pii/S2352550924003221>

Why New Brunswick Needs a Digital Agricultural Growth Strategy

New Brunswick’s agricultural sector is at a critical crossroads. While digital technologies are transforming food production practices across Canada, the province has been slower to adopt these innovations, putting local producers at a competitive disadvantage. Without a clear strategy to accelerate digital adoption, New Brunswick producers risk falling behind in productivity, efficiency, and long-term sustainability.

According to the 2021 Census of Agriculture, New Brunswick food producers were significantly less likely to be using key agricultural technologies compared to the national average:

Technology	Canada	New Brunswick	Difference (Percentage Points)
Automated guidance steering systems (auto-steer)	19%	6%	-13 pp
Geographic Information System (GIS) mapping	10%	5%	-5 pp
Variable-rate input application	12%	10%	-2 pp
Drones	3%	2%	-1 pp
Soil sample testing	23%	20%	-3 pp
Slow-release fertilizer	17%	16%	-1 pp
Fully-robotic milkers*	13%	16%	+3 pp

(*Based on the share of dairy farms. All others based on the share of all farms.)

Source: Statistics Canada Table: 32-10-0379-01

While these statistics suggest a slower uptake of key technologies across the sector, they don’t tell the whole story. New Brunswick has demonstrated leadership in specific areas, most notably in the potato and dairy sectors. Internal data from the Department of Agriculture, Aquaculture and Fisheries (DAAF) indicates use of precision tools such as auto steer, GIS mapping, and robotic milking in these sectors. However, feedback from producers and stakeholders reveals that adoption is often surface level, such as the presence of GPS systems without full calibration or data utilization, limiting the technology’s impact. The discrepancies between federal and provincial data make it difficult to draw clear conclusions about the true extent and impact of adoption.

This lack of clarity reinforces the need for a focused strategy. The goal is not to suggest that New Brunswick is falling behind across the board, but rather to recognize that clearer, more coordinated data is necessary. By building on the strengths of individual sectors and ensuring that producers of all sizes and locations have access to the right tools and training, the province can move toward more widespread and effective use of digital agriculture.

To that end, this strategy begins with a Phase 1 needs assessment to validate current adoption levels, identify infrastructure and training gaps, and tailor supports to local conditions. By doing so, the strategy aims to ensure that digital transformation efforts are evidence-based, producer-informed, and regionally relevant.

This strategy builds on the July 2024 report The Future of Digital Agriculture in New Brunswick: Opportunities and Challenges, and reflects the growing consensus that digital innovation is essential—not only for productivity and efficiency, but for sustainability, food security, and rural resilience.

The Need for Strategic Digital Agriculture Growth

As global agriculture undergoes a digital revolution, New Brunswick must take a strategic approach to ensure its food production enterprises and agribusinesses remain competitive, efficient, and sustainable. Digital agriculture is not just about adopting new tools—it is about creating a connected, data-driven, and resilient agricultural sector that can adapt to evolving market demands, environmental challenges, and labor shortages.

However, not every producer will take the same path to digital adoption. While many food producers see technology as a way to enhance productivity, others may prefer to stick with traditional methods. Some producers are eager to integrate cutting-edge tools, while others are concerned about cost, complexity, data privacy, or the practicality of digital systems for their specific operation. Nonetheless, regardless of the size or scale of production, there are digital tools available that can support and enhance operations—whether through basic data tracking, precision inputs, or fully integrated smart systems.

Building a Competitive and Sustainable Agricultural Sector

To overcome these barriers, New Brunswick needs a clear and actionable strategy that provides food producers with the technology, training, and financial support necessary for digital transformation. A strategic approach to digital agriculture will:

- Grow the agricultural service industry by supporting businesses that provide digital infrastructure, equipment maintenance, agronomic consulting, data analysis, and other specialized services essential to food producers adopting new technologies.
- Encourage collaboration between food production enterprises, service providers, research institutions, and government to accelerate innovation and adoption of emerging technologies.
- Align policy and regulatory frameworks with digital agriculture priorities, ensuring long-term support for the sector's modernization.
- Expand rural broadband and digital connectivity to support precision farming, automation, and AI-driven decision-making.
- Provide financial incentives and funding programs to offset the costs of digital adoption, ensuring that operations of all sizes can integrate smart technologies.
- Strengthen workforce development initiatives by equipping both food producers and agricultural service professionals with the skills needed to manage, operate, and maintain digital tools.

Driving Investment & Economic Growth

Attracting investment is critical to scaling digital agriculture adoption across New Brunswick. By leveraging government and private sector partnerships, fostering AgTech innovation, and positioning the province as a leader in smart farming, New Brunswick can create new economic opportunities, increase efficiency, and enhance sustainability.

- Government & Private Sector Partnerships:
 - o Secure co-investments from provincial and federal funding bodies to scale up innovation hubs and AgTech adoption incentives.
 - o Develop public-private partnerships with upstream and downstream companies—such as equipment manufacturers, input providers, technology developers, processors, and distributors—to successfully align emerging digital technologies tailored to New Brunswick's agricultural sector.
 - o Align investment strategies with funding organizations identified in the New Brunswick R&D Innovation Ecosystem Asset Map to maximize available resources.
- AgTech Accelerator & Start-Up Grants:
 - o Launch an AgTech Business Accelerator in collaboration with research institutions to support local start-ups developing precision agriculture solutions.
 - o Provide seed funding for early-stage AgTech companies focused on automation, climate resilience, and smart farm analytics.
 - o Encourage venture capital and private investment by showcasing New Brunswick's potential as a hub for AgTech innovation.
- Export Opportunities & Global Positioning:
 - o Promote New Brunswick as a leader in digital agriculture, participating in international AgTech trade missions and conferences.
 - o Establish strategic partnerships with international initiatives such as Horizon Europe and the Global Agri-Tech Innovation Alliance to access global research funding, attract foreign direct investment, and position New Brunswick as a preferred site for digital agriculture pilot projects.
 - o Attract international AgTech companies and innovation to develop, test, and scale technologies in New Brunswick through industry-academic-government collaborations supported by an Agriculture Innovation Hub.
 - o Support the global market expansion of New Brunswick-based AgTech companies through trade agreements, export incentives, and branding campaigns that highlight the province's leadership in smart farming solutions.

Building on the Foundation for Growth

A strategic and proactive approach to digital agriculture will position New Brunswick at the forefront of AgTech innovation. By investing in infrastructure, supporting entrepreneurship, and fostering global partnerships, the province can strengthen its position in smart farming. Moving forward, securing long-term funding and strengthening public-private collaboration will be essential to ensuring a resilient, competitive, and future-ready agricultural sector. Fortunately, New Brunswick is not starting from scratch—several local initiatives already demonstrate the province's capacity to lead. These examples showcase the innovation, collaboration, and real-world impact that a well-executed digital agriculture strategy can deliver.

Real World Examples

New Brunswick already boasts several standout initiatives that exemplify the province's capacity to lead in digital agriculture. McCain Foods' Farms of the Future project in Florenceville brings together advanced precision agriculture tools, data analytics, and sustainability practices to transform potato farming. This initiative demonstrates the potential for climate-smart, technology-driven solutions to improve yield, optimize inputs, and reduce environmental impact, while remaining commercially viable at scale.

Local innovation is also thriving through start-ups like Picketa Systems, a Fredericton-based company revolutionizing in-field nutrient analysis with its rapid tissue testing technology. By providing real-time data that supports precision input application, Picketa is helping farmers make better, faster decisions and protect profit margins. This is particularly valuable for small and medium-sized producers.

Additionally, the Living Labs program has enabled producers across the province to test emerging technologies and sustainable practices in real-world conditions. These applied research partnerships involving farmers, researchers, and government have been instrumental in reducing the risks of adoption and ensuring that innovations are grounded in the realities of New Brunswick's unique growing conditions.

These success stories provide a strong foundation for further growth. They demonstrate that with the right tools, support, and partnerships, New Brunswick producers are not only prepared to adopt innovation but are already showing leadership in doing so.

Stakeholder Consultations: A Collaborative Approach

A successful digital agriculture strategy must be built with direct input from those who will be most affected—food producers, agribusinesses, researchers, policymakers, and technology providers. Recognizing this, an extensive engagement process was conducted, including one-on-one interviews, group discussions, surveys, and participation in industry events. These consultations provided a deep understanding of the barriers, opportunities, and priorities shaping the future of digital agriculture in New Brunswick.

The insights gathered from this engagement are summarized in the SWOT analysis that follows, highlighting the province's current strengths, weaknesses, opportunities, and threats as they relate to digital agriculture.

STRENGTHS:

- Existing infrastructure and research capacity including institutions like the New Brunswick Institute for Research, Data, and Training provide a foundation for data-driven decision-making.
- Industry interest in digital innovation with early adoption by large-scale producers, such as food producers in the potato and wild blueberry sectors. Producers are integrating geospatial databases, soil optics mapping, and machine vision tools.
- Stakeholders express interest in regional partnerships, particularly between industry, academia, and government.
- Initiatives like Living Lab New Brunswick.
- The potential for an Atlantic Smart Farm initiative.
- Growing focus on workforce development and digital literacy.

WEAKNESSES:

- High initial investment costs and uncertain return on investment for small and medium-sized operations to adopt digital infrastructure.
- Lack of access to flexible and specialized training programs that accommodate food producers' availability.
- Connectivity issues, with rural broadband infrastructure gaps affecting real-time data collection and precision farming.
- Fragmented data systems and lack of standardized governance frameworks.
- Workforce misalignment between industry needs and current agricultural education programs.

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OPPORTUNITIES:

- Expansion of broadband infrastructure to support digital adoption in agriculture.
- Developing a data governance framework that ensures secure data management while allowing food producers to monetize and leverage data.
- Federal and provincial funding programs structured to support scalable opportunities, aligning with larger international initiatives.
- Strategic workforce development initiatives.
- Integrating digital literacy into agricultural education at the K-12 and post-secondary levels.
- Expanding training for technicians and operators on digital tools.
- Media and branding initiatives to attract new talent and modernize the agricultural sector's public perception.
- Positioning New Brunswick as a testbed for pilot digital agriculture projects.
- Establishing a Digital Agriculture Cluster:
 - A dedicated research, training, and innovation hub to drive the development and adoption of digital technologies.
 - Serving as a collaborative space for industry, academia, and government to advance digital solutions in agriculture.
 - Providing resources for workforce development, including certification programs and industry-led research initiatives.
 - Supporting ongoing workforce development with dedicated staff positions, such as a Workforce Development Coordinator, to oversee training initiatives, industry partnerships and education alignment.

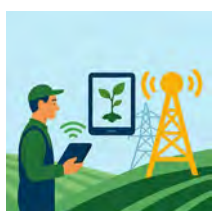
THREATS:

- Economic constraints on food producers, with declining incomes impacting their ability to invest in new technology.
- Policy and regulatory uncertainties that could slow adoption or create compliance challenges.
- Resistance to change among small and traditional operations.
- Cybersecurity risks associated with increased data reliance in digital agriculture, as well as vulnerabilities due to reliance on digital infrastructure that could be impacted by solar storms and extreme weather events.
- Limited coordination and funding uncertainties that may delay the implementation of digital strategies.

In summary industry and stakeholders expressed a mix of enthusiasm and concern about digital transformation in the province's agricultural sector. While many see the potential for improved productivity, sustainability, and economic growth, others remain hesitant due to the costs, complexity, and applicability of digital solutions to the realities of Atlantic Canada's food production landscape.

Strategic Priority Areas for Action

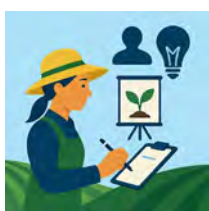
Based on the extensive stakeholder engagement; including producers, researchers, industry leaders, and policymakers; this strategy is built around five interdependent priority areas that have evolved and reflect the core considerations required to enable meaningful, scalable change and will guide New Brunswick's digital agriculture transition.



Technology Adoption, Infrastructure, and Knowledge Transfer



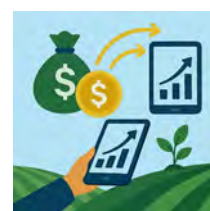
Data Governance, Security, and Trust



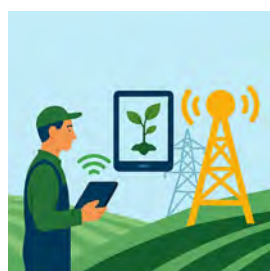
Workforce Development and Training



Innovation, Research, and Industry Collaboration



Financial Incentives and Economic Growth



Technology Adoption, Knowledge Translation and Transfer, and Infrastructure

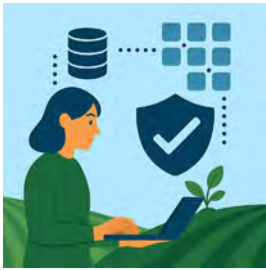
Broadband and Connectivity Limitations

Rural internet access remains inconsistent, making it difficult to deploy precision agriculture, real-time monitoring, and cloud-based management systems. Many food producers called for government-industry partnerships to expand broadband infrastructure and explore alternative connectivity solutions.

Adapting Technology to Regional Needs

Many digital agriculture tools are designed for large-scale operations in Western Canada or the U.S., making them less applicable to New Brunswick's smaller operations, unique soil conditions, and variable climate. Food producers stressed the need for region-specific research and technology development.

	Knowledge Translation and Transfer, and Support Networks Many producers lack access to technical expertise and troubleshooting support when adopting new technologies. Stakeholders suggested peer learning programs, farm-based demonstrations, and industry-led mentorship initiatives to increase confidence in digital tools.
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 Data Governance and Trust	Who Owns Food Production Data? Food producers worry that large agriculture and technology companies will control and profit from agricultural data, leaving producers with limited access to their own insights. Clear data governance policies are needed to ensure food producer control and transparency in data usage.
	Data Integration and Interoperability Food producers often use multiple digital tools that do not communicate with each other, leading to fragmented data systems. Stakeholders emphasized the need for standardized platforms that allow seamless integration of various technologies.
	Cybersecurity and Digital Infrastructure Risks Increased reliance on IoT-enabled sensors, cloud computing, and automated systems raises concerns about data breaches, hacking threats, and ransomware attacks targeting operations. While extreme weather events and solar storms could disrupt digital infrastructure, threatening data storage, precision farming tools, and automated management systems.



Workforce Development and Training

Limited Access to Digital Agriculture Training

Food producers and farmworkers need hands-on learning opportunities tailored to their schedules. Stakeholders suggested short-term certification programs, online training modules, and mentorship programs.

Lack of Digital Specialists in Agriculture

There is a growing need for technicians and consultants who can support digital agriculture adoption. Stakeholders recommended incentives to attract AgTech professionals to the region and the development of agricultural technology apprenticeship programs.

Establishing a Chair in Digital Agriculture

Stakeholders strongly supported the creation of a dedicated research and teaching position to drive innovation, support regional research, and develop New Brunswick-specific solutions in digital agriculture. This position would ensure ongoing leadership, industry collaboration, and curriculum development focused on the province's unique agricultural landscape.

The Development of a K-12 Centre of Excellence in Digital Technologies that Applies to Agriculture

The Agricultural Sector can enhance the work being completed in their Ag in the Classroom program by developing a Centre of Excellence in Digital Technologies that Applies to Agriculture. Modeled after (or incorporating within) existing Centres of Excellence in Energy, Health, Digital Innovation, and Skilled Trades, this initiative will introduce STEM-based agriculture programs in K-12 education, providing students with hands-on experience in precision farming, AI-driven analytics, automation, and data science applied to agriculture. By collaborating with industry leaders, universities, and government partners, the Centre of Excellence in Digital Agriculture will help build a pipeline of future agricultural innovators while offering virtual and experiential learning opportunities. Additionally, the Centre will support career exploration, helping students recognize AgTech, sustainable farming, and agricultural entrepreneurship as viable career paths in New Brunswick.



Innovation, Research and Industry Collaboration

The Atlantic Smart Farm Initiative

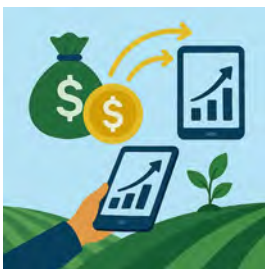
Stakeholders see potential in regional collaboration to test and validate AgTech solutions tailored to Atlantic Canada's unique environmental conditions. The development of the Atlantic Smart Farm Initiative would provide a living laboratory where food producers, researchers, and industry partners can trial data-driven food production techniques, automation, and climate-smart agriculture in real-world conditions. A suggested key focus is ensuring that technology developed for large-scale Western Canadian operations is adapted to the soil conditions, weather patterns, and smaller food production structures of Atlantic Canada.

The Living Labs Program

Stakeholders praised Living Labs New Brunswick for its applied research on sustainable farming practices and digital agriculture tools. Expanding on-site research will allow food producers to trial new technologies, compare outcomes, and assess economic feasibility before committing to full adoption.

NB-IRDT 2.0 Data Trust

A data trust is a structured framework that enables secure, ethical, and governed access to sensitive data while ensuring privacy and compliance. At NB-IRDT, the data trust functions as a trusted custodian of linkable administrative datasets across sectors like health, education, labour, and the environment, facilitating evidence-based policymaking and research innovation while adhering to stringent regulatory safeguard.



Financial Support for Digital Transformation

Financial Incentives to Reduce Upfront Costs

Many producers struggle to justify significant investments in automation, sensors, and AI-driven systems. A Digital Agriculture Adoption Fund could provide cost-sharing programs, tax incentives, and low-interest loans to help food producers transition.

Funding for Early Implementation and Adopter Projects:

Food producers suggested creating small-scale digital adoption projects where producers can test technologies with financial and technical support before making long-term commitments.

	Better Alignment of Government Funding Programs Stakeholders noted that many existing agricultural funding streams are not designed for digital transformation. They recommended adapting current programs to support AgTech investments and improving communication about available financial resources.
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The insights gathered from these stakeholder consultations form the foundation of this strategy, ensuring that digital agriculture initiatives in New Brunswick are practical, scalable, and beneficial for all food producers—whether they are early adopters or prefer traditional practices. Continued collaboration with food producers, industry leaders, and policymakers will be essential to monitor progress, refine implementation strategies, and address emerging challenges.

By investing in infrastructure, data security, workforce training, innovation hubs, and financial incentives, New Brunswick can build a strong and inclusive digital agriculture ecosystem that supports long-term growth and resilience. These priorities are reflected in the roadmap for implementation. Each recommended action aligns with one or more of these priority areas to ensure coherence, clarity, and targeted investment.

Implementation Roadmap

Digital ROI depends on systemic enablers like broadband access, common data standards, and a skilled support workforce. Without these, tech adoption alone may yield limited productivity gains. As such, this roadmap provides a step-by-step guide to implementing digital agriculture initiatives, ensuring food producers, industry leaders, policymakers, and researchers have the support and resources needed to succeed. Each phase builds upon the previous one, ensuring that digital adoption, workforce development, infrastructure improvements, and innovation efforts are well-coordinated and aligned with real-world conditions.

Phase	Key Actions
Phase 1: Laying the Foundation (0-12 months) Establish governance, conduct assessments, and build awareness	Solidify Digital Agriculture Steering Committee Develop a coordinated rebranding strategy Conduct a needs assessment Develop a communications strategy Establish an ROI framework and sector-specific impact assessment Design a talent pipeline strategy aligned with education and workforce needs Secure initial funding to support the adoption and scaling of proven digital agriculture technologies and practices, building on the success of early adopters Launch the Centre of Excellence in Digital Agriculture Support infrastructure planning for rural connectivity Support the development of the Atlantic Smart Farm Initiative (network)

	Establish a Global AgTech Innovation Liaison
Phase 2: Early Implementation and Adoption (12-24 months) Test and refine digital agriculture solutions	Launch the rebranding of Agriculture as Food Production Launch targeted digital agriculture early implementation projects Design and implement a talent pipeline strategy for succession, upskilling, and recruitment Establish a coordinated digital agriculture training framework Pilot short-term certification and co-op programs in digital agriculture Develop a data governance and security framework Support phased broadband expansion Expand financial incentives for early adopters
Phase 3: Scaling and Integration (24-48 months) Expand adoption of proven technologies and practices, integrate digital solutions across the sector, and build long-term governance and investment frameworks	Institutionalize the rebranding of Agriculture to Food Production Scale up adoption of technologies and practices Integrate digital agriculture into sector-wide policies Institutionalize the Talent Pipeline Strategy Develop an AgTech certification framework Expand financial incentives and investment programs Expand applied research and demonstration through an Atlantic Smart Farm Network Leverage insights from the Global AgTech Innovation Liaison Strengthen the investment climate through policy modernization

With the foundational steps outlined, the immediate priority is to solidify a governance structure to advance the priorities identified and initiate the needs assessment process. By ensuring that the first steps focus on consultation, infrastructure assessment, and strategic alignment, New Brunswick will set the stage for a well-supported, scalable, and food producer-driven digital transition.

To support the phased approach as outlined above an accompanying detailed *Harnessing Innovation New Brunswick Digital Agriculture Implementation Roadmap* identifies specific initiatives in each of the priority areas throughout the phased approach.

The Strategy and Implementation Roadmap ensures digital agriculture becomes a key driver of economic growth, sustainability, and competitiveness, securing New Brunswick's position as a leader in smart, data-driven food production.

A Call to Action

To fully realize the potential of digital agriculture, collaboration between government, industry leaders, researchers, and food producers is essential. This strategy sets the foundation for a phased approach to digital transformation, with a focus on infrastructure investment, workforce development, financial incentives, and regulatory support.

New Brunswick's agricultural sector is resilient and adaptable. With the right investments and partnerships, the province can become a leader in sustainable, technology-driven agriculture, ensuring long-term prosperity for food producers, agribusinesses, and rural communities.

Now is the time to act. Through strategic investments, targeted policies, and industry collaboration, New Brunswick can harness digital agriculture to strengthen food security, enhance sustainability, and drive economic growth for generations to come.

Methodology and Approach

The development of the New Brunswick Digital Agriculture Strategy follows a structured, evidence-based approach to ensure it effectively addresses the evolving needs of food producers, agribusinesses, policymakers, and research institutions. The strategy builds on extensive prior research and consultations, incorporating key insights from earlier stakeholder engagements, industry reports, and regional assessments. This foundation of past work has been instrumental in shaping the strategy's direction, ensuring that it is informed by both historical trends and emerging opportunities.

The strategy follows a four-phase process to guide its development and implementation. The first phase, discovery and needs assessment, involved a combination of reviewing existing research and conducting new assessments to evaluate the current state of digital agriculture in New Brunswick. This process included analyzing findings from past reports and industry studies while also engaging directly with food producers, agribusiness leaders, research institutions, and government representatives to capture fresh insights. The key focus areas included trends in digital adoption, barriers such as infrastructure limitations and workforce development gaps, and opportunities for policy and investment alignment. By integrating previous research with new consultations and data collection, this phase provided a comprehensive and up-to-date understanding of the province's agricultural technology landscape, ensuring that the strategy reflects both historical trends and emerging opportunities.

The second phase, engagement and collaboration focused on direct stakeholder engagement to validate and expand on previous findings. AANB, in partnership with Living Labs and other key stakeholders, facilitated a series of workshops, surveys, and focus groups, ensuring broad representation across various commodity groups, farm sizes, and technology adoption levels. The March 12, 2024, workshop in Fredericton was a key precursor to this strategy, highlighting industry challenges and priorities. Building on this groundwork, new stakeholder engagements have refined the strategy to reflect current economic conditions, emerging technologies, and regional opportunities.

In the third phase, strategic planning and prioritization, the findings from earlier research and new stakeholder engagements were synthesized into a targeted action plan. The strategy was designed to align with New Brunswick's Agricultural Growth Strategy, climate action initiatives, and national digital agriculture policies, ensuring its feasibility and relevance for government and industry stakeholders. The key priorities identified include expanding digital infrastructure, workforce development, incentivizing AgTech innovation, enhancing sustainability and climate resilience, and fostering regional and national collaboration. By structuring the strategy around these focus areas, it provides a clear and practical framework for accelerating digital adoption in the agricultural sector.

The final phase, implementation and monitoring, establishes a structured approach for rolling out the strategy in short-, medium-, and long-term phases. Performance metrics have been defined to assess progress, including tracking digital technology adoption rates, workforce participation in digital training programs, expansion of precision agriculture practices, and financial returns from AgTech investments. AANB and key partners will oversee the strategy's execution through a governance framework, ensuring accountability and adaptability as industry needs evolve.

This strategy has been co-developed with stakeholders, incorporating best practices from leading digital agriculture initiatives across Canada and beyond. It builds on previous research and industry reports, while integrating new insights. Benchmarking against successful models, such as Canada's Pan-Canadian Smart Farm Initiative and Western Canada's AgTech strategies, has provided a foundation for practical

recommendations tailored to New Brunswick's agricultural landscape. Additionally, the strategy aligns with Agriculture and Agri-Food Canada's (AAFC) digital agriculture investment programs and the Living Lab Initiative, supporting long-term innovation and sustainability.

Recognizing the rapid evolution of digital technologies, the strategy is designed to be adaptive and scalable. A built-in review and evaluation process will allow for periodic updates based on technological advancements, market shifts, and ongoing stakeholder feedback. This ensures that the strategy remains relevant and responsive to the needs of New Brunswick's food production sector.

By integrating historical research, recent stakeholder engagement, and strategic alignment with government and industry priorities, the New Brunswick Digital Agriculture Strategy serves as a practical, action-oriented roadmap for the future of agriculture in the province. This methodology ensures that digital transformation is not just an aspirational goal, but a tangible and achievable pathway toward economic growth, sustainability, and food security in New Brunswick.



Definitions

In the interests of clarity, the following definitions are offered on some of the terminology used in this report.

AgTech means the development and application of technologies—digital, mechanical, biological, or chemical—designed to improve efficiency, productivity, sustainability, and profitability across the food production sector. This includes innovations used in food production enterprises, processing, transport, marketing, and related service sectors. AgTech may support data generation, enhance automation, optimize inputs, improve environmental outcomes, or contribute to the overall modernization of agricultural systems.

Digital Agriculture means the use of digital technologies to: 1) generate data used to better inform production related decisions; 2) monitor operations; or 3) remotely operate machinery. The term digital agriculture encompasses the entirety of the food production sector, including food production enterprises, processing, transport, market and related service sectors. This is sometimes referred to as precision agriculture.

Environment Controlled Food Production Systems include hydroponics, aquaponics, aeroponics, indoor food production and laboratory-grown meat.

Food Production Enterprises means farms or grow out operations (NOTE: designed to modernize terminology and capture the complexity and scale of modern food production).

Food Security means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life. (NOTE: This can be applied on a personal or jurisdictional basis (e.g. New Brunswick is rated as far as its overall food security status).

Precision Farming: the use of information derived by digital or other means, to help a grower more precisely target and minimize inputs to production with a view to increasing yield (quantity and quality) at lower cost.

Regenerative Agriculture: Agriculture practices that seek to improve economic viability while also improving soil, water and air quality, enhance ecosystem biodiversity, produce nutrient-dense food, and store carbon to help mitigate the effects of climate change (e.g. the use of cover crops and innovative tilling practices to minimize soil disruption)

Smart Farms: The optimal blend of digital, precision and regenerative agriculture practices on a food production enterprise.

Smart Farm Network: A network of food production enterprises in concert with one or more post secondary institutions sharing knowledge gained on the deployment of digital technologies to enhance economic, social and environmental sustainability outcomes.

Sustainable Agriculture: Food production enterprises or sectors that are sustainable on an economic, social and environmental basis.



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