

# Urban Agriculture Planning Education Programs *Needs and Opportunities*



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Colin Dring, Royal Roads University  
Robert Newell, Royal Roads University  
Stefania Pizzirani, University of the Fraser Valley

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# EXECUTIVE SUMMARY

This report summarizes the industry engagement activities informing the design and development of an educational program on urban agriculture planning. In response to intersecting crises in public health, climate, and food insecurity, there is growing urgency to develop sustainable, resilient, and equitable food systems. Urban agriculture is increasingly viewed as a vital part of these efforts, as it offers opportunities for local food production, green infrastructure, community development, and policy innovation. However, its integration into local planning is an underdeveloped and not well-established practice; thus, new competencies, planning tools, and interdisciplinary training are required to advance efforts toward building local food systems.

Between January and April 2025, a series of semi-structured interviews were conducted with 16 professionals who work in British Columbia in the areas of food systems, agriculture, and urban planning (including four accredited planners). Participants shared their thoughts on the educational pathways, knowledge, and skills needed to effectively support urban agriculture planning. Interview transcripts were thematically analyzed to identify recurring themes related to industry needs, skill gaps, and educational formats.

Findings confirm that food system planning is marginalized within accredited Canadian planning programs, with limited inclusion of agricultural concepts and stakeholder engagement strategies. The interviewees consistently emphasized a need for training in systems thinking, land use policy, stakeholder engagement, and equity-informed approaches to food planning. The analysis identified a critical gap in digital and analytical skills related to food system mapping, scenario planning, and spatial decision-making.

To meet these challenges, an urban agriculture planning micro-credential is being developed as part of a suite of four stackable, online micro-credentials, designed to upskill working professionals and support learner access across diverse geographies. The educational programs are designed to deliver both technical knowledge and place-based competencies, enabling learners to effectively navigate land use planning, stakeholder engagement, and food system transformation in their local contexts.

## Recommendations

- Deliver micro-credentials in flexible, online formats to ensure accessibility for remote learners, working professionals, and underrepresented communities.
- Centre local context and land use governance in urban agriculture training, including practical applications of zoning, policy instruments, and municipal planning tools.
- Equip learners with interdisciplinary skills such as systems mapping, stakeholder facilitation, and scenario-based planning for food systems.
- Strengthen institutional pathways through curriculum mapping and alignment with existing certificate, diploma, or degree programs.
- Recognize completion of courses via digital badges and professional development credit, and align with initiatives like the StrongerBC Future Skills Grant to enhance access and uptake.

# INTRODUCTION

The convergence of multiple crises, such as the COVID-19 pandemic, climate change, environmental degradation, and resource depletion, has amplified vulnerabilities within food systems in Canada and beyond. These pressures have led to growing food insecurity and a rise in diet-related health issues such as obesity, malnutrition, diabetes, and heart disease. In recognition of these issues, increasing attention has been given to the fragility of global food supply chains and the urgent need for transitions toward just, resilient, and sustainable food system transitions. In British Columbia, interest in strengthening local and regional food systems is growing, including the adoption of high-tech solutions such as vertical and cellular agriculture. While promising, these innovations must overcome significant socio-political and economic barriers to achieve widespread implementation.

One of the most pressing constraints on food systems in Canada is a labour shortage in the agricultural sector. The Canadian Agricultural Human Resources Council (CAHRC, 2019) estimates that by 2029, the sector will experience a shortfall of 123,000 workers, leaving nearly one in three agricultural jobs unfilled. While automation and technological innovation may address some of these gaps, there is a critical need to train a new generation of agricultural professionals equipped with the data literacy, technical knowledge, and digital tools necessary for emerging food system technologies (Stackhouse, 2019). However, the public remains wary of high-tech food production methods. Studies have identified consumer concerns about the "naturalness" (or lack thereof) of vertical and cellular agriculture, along with confusion about where such facilities should be located and how they align or conflict with community values (Glaros et al., 2023; 2024).

In addition to technical and workforce gaps, there is a growing need for food system planning expertise (Campbell, 2004). Professionals who can bridge divides and integrate diverse local planning and policy areas, such as land use, transportation, energy, water, public health, and education are essential to supporting an effective incorporation of new agricultural technologies into local food systems. The complexity of food systems requires interdisciplinary and intersectional knowledge that spans the fields of planning, policy, environment, and equity (Horst et al., 2017). Educational and professional development initiatives are vital for equipping practitioners with the competencies and capacities to critically engage in food system and agricultural land use planning.

Momentum is building to move beyond the marginal inclusion of food topics in planning education and toward more robust curricular integration. Food system planning, once considered a peripheral issue within mainstream planning frameworks (Pothukuchi & Kaufman, 2000; Soma & Wakefield, 2011) has become increasingly visible through interdisciplinary scholarship, pedagogy, and policy (Greenstein et al., 2015; Valley et al., 2017). However, gaps remain. For example, a study in the United States found that only 13% of accredited planning programs had ever offered food system courses (Hammer, 2004). The number of programs offering such courses increased from 9 in 2004 to 27 by 2012 (Greenstein et al., 2015); however, no equivalent Canadian study has been conducted, which raises questions about how agricultural issues are conceptualized in Canadian planning education and whether agriculture is treated as a central or peripheral component of food systems learning.

# INTRODUCTION

After two decades of only incremental progress, food system planning is still widely treated as a niche specialization within broader planning education. Agricultural planning in particular, as a sub-field of food planning, has received little attention in the literature (for exceptions see Connell, 2023; Dring, 2023). This lack of attention contributes to a misconception that rural and agricultural land uses are interchangeable. In addition, the equating of “rural” and “agriculture” has led to the planning profession’s vital role in shaping food environments and transforming food systems across urban-rural continuums being overlooked.

Currently, there are limited formal training opportunities in ag-tech and food systems planning. Three distinct learner groups would benefit from such training: (1) postsecondary students seeking employment in environmental, health, food, and community planning and development , (2) individuals already working in planning or food systems who require flexible upskilling opportunities, and (3) practitioners who aim to facilitate public engagement around urban agriculture, planning considerations, and emerging food production technologies. Addressing the training gap requires educational programming that is accessible, flexible, and recognized by industry and government alike as useful and credible.

The broader research project detailed in this report directly responds to the aforementioned gaps and needs by gaining insights for informing the development of online, stackable micro-credentials in urban and vertical agriculture. The intention is to design these micro-credentials for broad accessibility, including for learners in remote or rural communities, and to offer flexible, credentialed training that supports learner and workforce transitions into food systems planning work. The micro-credentials are particularly well-suited for farmers, food system practitioners, and underemployed workers seeking to build new skills or explore ag-tech entrepreneurship.

The micro-credential programs are being developed in online formats, as such formats support inclusive participation. Additionally, the program series has been designed with a stackable structure, allowing learners to take completely different micro-credentials to comprehensively build competencies over time. Additionally, the credentials align with funding programs such as the StrongerBC Future Skills Grant, which supports British Columbians in acquiring in-demand skills.

## **The four micro-credential programs being developed in this project are:**

1. Vertical Agriculture for Local-Regional Food Systems
2. Planning for Urban Agriculture
3. Agricultural Data and Local-Regional Food System Development
4. The Business of Ag-Tech and Entrepreneurship.

# METHODS

The focus of this report is on activities supporting the development of the Planning for Urban Agriculture micro-credential. These activities include a series of semi-structured interviews with 16 food system professionals (including four accredited planners), all of whom have knowledge, expertise, and/or experience in the field of urban agriculture (see Table 1). Recruitment included participants beyond just the planning profession, as many different types of practitioners are involved in food planning practices.

The interviews were conducted between January and April 2025, and they ran between 30 to 100 minutes. Participants represented a range of sectors and planning contexts (e.g., non-profit organization, local government, school districts), and some participants have multiple affiliations (e.g., a food system coordinator, planner, private consultant).

**Table 1.** Affiliations of semi-structured interview participants

<b>Participant Affiliation</b>	<b>Participants (n)</b>
Government (local, provincial)	3
Accredited planner	4
Food system coordinator (school district, food bank)	3
Private consultant	4
Academic	4

Interview participants were asked to reflect on their professional trajectories, the responsibilities associated with their roles, and the types of experiences and education that have shaped their practice in urban agriculture (Table 2). The interviews were recorded, transcribed, and imported into NVivo (v. 14.0) for analysis, using a thematic coding approach designed to identify priority industry needs, gaps in current skills and knowledge, and preferences for micro-credential structure and delivery. The analysis identified recurring themes such as equity considerations, technical competencies, policy and governance knowledge, and participatory planning skills.

The interview research and analysis informed a set of recommendations for the content, structure, and implementation of the Planning for Urban Agriculture micro-credential. Insights from the analyses informed delivery modalities, including asynchronous and experiential components, as well as highlighting the value of aligning micro-credential outcomes with real-world planning challenges. The analysis also underscored the need for strong industry-academic collaboration, education that is tailored to local contexts, and learner recognition mechanisms such as digital badges or professional development credit. The findings from this work have provided valuable guidance on how to design a micro-credential that is relevant, applicable, and responsive to industry expectations.

# METHODS

**Table 2.** Semi-structured interview questions

<p><b>Background Questions</b></p> <ul style="list-style-type: none"><li>• Describe your role(s) at [your institution/ organization/ enterprise] (e.g., farm, university)? What about outside the [institution/organization/enterprise]?</li><li>• What experience did you have that led to your current role(s)? (e.g., employment, volunteer, education, apprenticeship/mentorship).</li></ul>
<p><b>Food System Planning Education Questions</b></p> <ul style="list-style-type: none"><li>• How was urban agriculture covered in formal education? What about food systems topics covered in education (if relevant)?</li><li>• What are the major gaps in current education on planning for urban agriculture? Food systems?</li><li>• What food system challenges are most important to you? 10-15 years from now?</li><li>• Considering current food systems challenges (i.e., climate change, land access/privatization, growing inequalities, changing demographics) and emerging food production technologies (e.g., digital agriculture, controlled environment, biotech)<ul style="list-style-type: none"><li>◦ What are the key topics that should be included in food system planning education? Urban agriculture education?</li></ul></li></ul>
<p><b>Micro-Credential Specific Questions</b></p> <ul style="list-style-type: none"><li>• What would be the advantages of delivering food planning education through micro-credential programs? What would be the disadvantages of the micro-credential approach?</li><li>• How might something like a food planning micro-credential be organized?</li><li>• What range of practices should urban agriculture planners be able to do (skills)?</li><li>• How would learners be assessed (if at all)?</li></ul>

# FINDINGS

## Industry Needs for Knowledge Content

Emerging professionals working at the intersection of food systems, agriculture, and urban planning must be equipped with a broad yet integrated foundation of knowledge that reflects the complexity of these fields. The analysis highlighted several key content areas for developing an effective urban agriculture planning program. These include technical knowledge, governance structures, legal frameworks, and the social, economic, and environmental factors that interact with food systems. Food production and distribution increasingly intersect with challenges related to urban growth, climate change, and social equity, and the ability to navigate these intersections is a core competency for practitioners.

A foundational knowledge area is systems literacy, that is, understanding how food systems operate as interconnected networks of material flows, relationships, and cultural practices. Urban agriculture and local food system planning education must engage with the full lifecycle of food, from production to processing to distribution to consumption and waste. Professionals need to understand the logistical and technical aspects of food flows, while also engaging with social and relational dimensions, such as how food relates to cultural identity, community cohesion, and wellbeing. An understanding of local government functions is also important, as local planning policies, zoning bylaws, and program implementation play a strong role in shaping local and regional food systems.

Legal and regulatory literacy competencies needed for urban agriculture education, includes familiarity with provincial legislation such as the Local Government Act, which guides municipal planning processes, and the Agricultural Land Reserve Regulation, which protects farmland and defines its permitted uses. Knowledge on how various governance models influence food system decision-making is also important, including food policy councils, agricultural advisory committees, and community-based non-profits. These entities often act as intermediaries between public agencies and community stakeholders, advocating for sustainable, just, and responsive food policies.

An emerging and increasingly urgent area of knowledge is food sovereignty, especially as it relates to emergency responsiveness and technological developments in agriculture. Professionals must understand how technological sovereignty (i.e., communities having control over the tools and data that shape their food systems) relates with broader equity goals. Issues such as food insecurity, affordability, land access and succession, and racial and economic disparities are embedded in food systems. Practitioners must be prepared to analyze and respond to these issues using inclusive, justice-oriented frameworks.

Conflict management is another critical knowledge area, particularly as urban expansion, climate adaptation, and resource scarcity lead to land use competition. Professionals must understand the roots of agricultural conflict and develop strategies for resolving tensions that emerge among farming, conservation, housing, and industrial development. Additionally, familiarity with different forms of agricultural production, including conventional, organic, vertical, and cellular agriculture, enables assessments of the implications of these production practices for land use, climate resilience, and food access.



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Emerging urban agriculture and local food systems planning practitioners need a robust understanding of agricultural infrastructure and inputs. This includes knowledge of resource requirements such as water, light, growing media, energy, fertilizers, and soil amendments. Other important knowledge areas include infrastructure needs and the environmental implications of infrastructure related to transportation networks, storage facilities (e.g., dry, cold, controlled environments), and distribution systems. Emerging practitioners should learn how to apply environmental principles and the precautionary approach to promote long-term sustainability in planning and policy-making.

Food system planning education must extend beyond production-centric models to include community infrastructure and social outcomes. For example, while community gardens may not substantially address food insecurity, they contribute to mental health, social capital, and environmental education objectives. This example demonstrates the importance of integrated, cross-sector approaches that align food practices with broader sustainability and equity objectives.

By developing competencies in the various knowledge areas discussed above, emerging practitioners and professionals will be well positioned to engage in efforts toward developing resilient, just, and future-oriented food systems. Table 3 provides a summary of the knowledge areas that are required in an effective and comprehensive urban agriculture and local food systems planning education program.

**Table 3.** Knowledge areas for an urban agriculture planning education program

Area	Topics
Food systems	<ul style="list-style-type: none"> <li>• Food systems components and processes</li> <li>• Food system relationships with social and environmental factors</li> </ul>
Governance and policy	<ul style="list-style-type: none"> <li>• Local governments roles and responsibilities in food and agriculture</li> <li>• Planning legislation and legal structures (e.g., Local Government Act, Agricultural Land Reserve)</li> <li>• Governance structures and models (e.g., food policy councils, agricultural advisory committees, non-profit society, etc.)</li> </ul>
Local agri-food issues	<ul style="list-style-type: none"> <li>• Equity concerns around farmland access and land succession</li> <li>• Conflicts among different land use and resource use priorities</li> <li>• Food insecurity and challenges related to food access and affordability</li> <li>• Food sovereignty and technological sovereignty</li> </ul>
Food production	<ul style="list-style-type: none"> <li>• Different food production types and methods (e.g., conventional, vertical, organic, and cellular agriculture)</li> <li>• Agricultural inputs and needs (e.g., water, light, growing medium, inputs, transportation, storage)</li> <li>• Applications of sustainability thinking and the precautionary principle</li> <li>• Food system infrastructure needs and environmental implications</li> </ul>

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## **Industry Needs for Technical, Digital, and Analytical Skills**

Emerging practitioners working in the fields of food systems, agriculture, and urban planning must develop a diverse and adaptable skill set for engaging with stakeholders, interpreting data, navigating complex policy environments, and supporting the design and implementation of sustainable and resilient food systems. The analysis revealed a series of necessary practitioner skills that reflect the evolving demands of the agri-food sector and include technical proficiencies and relational and strategic competencies. A summary of these skills and competencies can be seen in Table 4. As food systems become increasingly interwoven with climate change, equity, and land use concerns, these skills will form the backbone of professional practice in urban agriculture and local food system planning.

The ability to analyze and interpret food system data is a critical skill for urban agriculture and local food system planning practitioners. Practitioners must be able to effectively examine food flows, track land use trends, and understand economic indicators related to the shaping of regional food systems. Food system mapping is a valuable technique that allows practitioners to visualize and examine relationships among producers, distributors, and consumers. Food system mapping can also be used to identify gaps in food infrastructure, services, and accessibility.

Stakeholder engagement and facilitation are critical competencies for food system planners. Professionals must be able to bring together diverse actors, such as farmers, planners, Indigenous communities, local businesses, and civil society organizations, and these professionals should know how to facilitate collaboration, dialogue, and decision-making. Such work often involves navigating complex power dynamics and conflicting interests, which requires skills in negotiation, mediation, and inclusive facilitation. Effective stakeholder engagement involves coordinating activities and interests, cultivating trust, and fostering long-term partnerships that centre community voices.

Competency in policy analysis and development is another important skill area. Emerging practitioners and food systems professionals need to develop skills in the evaluation of the planning tools, legislation, and governance structures that shape food systems, as well as skills in the assessment of where reform or advocacy is needed. Such skills involve interpreting regulatory texts, understanding jurisdictional responsibilities, and developing fluency in municipal, provincial, and federal policy processes. Other necessary skills include those related to government relations and engagement (i.e., writing policy briefs, participating in consultations), as these skills enhance practitioners' ability to influence decisions and advance sustainable food agendas.

Also important is the ability to develop and lead initiatives that address food security and food sovereignty. Related skills include designing programs that increase food access and affordability while including cultural, ecological, and social justice considerations in these programs. Practitioners must be able to align short-term interventions with longer-term systems change strategies to ensure that food security efforts are transformative and not just reactive. Programs should be responsive to community needs, culturally grounded, and integrated with broader planning and sustainability goals.

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Systems thinking is a foundational skill that underpins many other skills and competencies in food system planning. System thinking enables professionals to understand how food systems are connected to other sustainability issues and priorities, such as housing, transportation, biodiversity, and climate adaptation. A systems approach encourages holistic thinking, which helps practitioners anticipate unintended consequences of strategies and policies, identify leverage points for improving food system resilience, and design interventions that produce ecological, economic, and social co-benefits. Practitioners can apply systems thinking to shift from siloed approaches to integrated and regenerative solutions to local food system development.

Urban agriculture planning and design require particular technical competencies. These include the ability to effectively integrate food production into the built environment, such as seen with community gardens, rooftop farms, edible landscapes, and vertical farms. Engaging in this type of work involves considerations around spatial constraints, zoning regulations, infrastructure needs, and community preferences. Practitioners need an understanding of urban design principles and sustainable agriculture practices to ensure that food production enhances, rather than conflicts with, other urban priorities.

Digital literacy is essential in contemporary planning practices. Skills in geographic information systems (GIS) software, data visualization, and digital engagement platforms are valuable for analyzing trends, modelling scenarios, and communicating complex findings with clarity and impact to diverse stakeholders. Virtual communication and engagement platforms support broader participation, enabling stakeholders to engage meaningfully in planning processes regardless of geographic or technological barriers. As planning increasingly incorporates digital tools, fluency in these technologies is essential for effective food system planning practice.

**Table 4.** Skills and competencies for an urban agriculture planning education program

Area	Skills
Planning	<ul style="list-style-type: none"> <li>• Understanding of zoning bylaws, permitting, planning legislation</li> <li>• Ability set visions and goals, and identify outcomes and impact areas based on case studies and evidence</li> <li>• Ability to engage in emergency planning and preparedness related to considerations on food, water, shelter, and animal/human health</li> </ul>
Engagement and coordination	<ul style="list-style-type: none"> <li>• Ability to effectively facilitate stakeholder engagement sessions, including process design, communication, and coordination</li> <li>• Skills related to project management and coordination</li> </ul>
Critical thinking and research	<ul style="list-style-type: none"> <li>• Ability to conduct gap analyses on programs and policies</li> <li>• Ability to identify successful policies and practices from other jurisdictions and to apply them to their local contexts and places</li> <li>• Ability to evaluate programs with respect to identifying how activities and outputs are related to outcomes and impacts, as well as how proposals and plans compare to their actual implementation</li> </ul>

# FINDINGS

## Learning Activities and Assessments

A diverse suite of experiential, analytical, and engagement-based learning activities is needed to equip learners with the knowledge and skills required for effective food system planning and agricultural policy development. The purpose of these activities is to foster critical thinking, applied learning, and systems-based understanding of food, land use, and governance. Rather than focusing solely on theory, an effective learning process also requires real-world application, creative problem-solving, and active participation. Such an approach to education allows learners to connect abstract planning principles to the on-the-ground realities of food systems and communities. Table 5 provides a summary of the activities recommended for an urban agriculture and local food system planning education program.

Participants noted that food planning education programs should involve local food system mapping exercises. This activity involves learners identifying and visualizing key actors, infrastructure nodes, and supply chain connections within their own community or region. Mapping food flows, from production to consumption, supports learning about the spatial, social, and logistical complexities that underpin food production and access. The visual and analytical nature of the mapping exercises helps learners identify strengths and gaps in regional food systems, laying the groundwork for targeted planning interventions, while also revealing the diversity involved in food systems and food flows.

Other educational activities identified by participants involve learners developing an agricultural or food policy proposal and an urban agriculture zone with designated land use permissions. These activities require learners to interpret and apply planning legislation, zoning regulations, and agricultural policy tools to a specific context. Learners are expected to balance social, environmental, and economic objectives while aligning their proposals with real-world governance constraints. Such exercises enhance understanding of regulatory systems and provide practical experience in drafting actionable and context-sensitive planning documents.

Stakeholder engagement is also central to the learning experience. Participants expressed a need for learners to practice convening and facilitating a community discussion on a pressing food system issue, such as climate adaptation, food insecurity, food-related public health concerns, or Indigenous food sovereignty. This type of activity involves collaborative leadership, cross-sector dialogue, and conflict resolution, which are important skills for practitioners working in the areas of participatory planning and policy development. By taking on facilitation roles in these activities, learners gain insight into how diverse perspectives can inform equitable and responsive food systems.

Participants discussed including analytical exercises into the programs, such as comparing and contrasting a land use plan with a zoning map. Such comparative work enhances learner understanding of how spatial planning processes can influence agricultural development and land use outcomes. The exercises can sharpen learner ability to discern the intentions, limitations, and implications of planning instruments, which is a key competency for navigating local and regional planning frameworks.

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To improve systems thinking, the education programs can include mind mapping exercises that involve organizing and connecting concepts related to governance, land use, sustainability, and food system dynamics. Mind maps can be used to facilitate integrative thinking in ways that encourage exploration of the relationships among political, ecological, and economic factors. Learners engaged in such activities gain clarity on how different parts of the food system and related systems influence one another and where interventions may have the greatest impact.

Experiential learning can be incorporated into the food education programs through curated site visits. These visits could include farms, community gardens, food banks, cultural food markets, and local food hubs or meal programs. By observing and interacting with a range of food system actors, learners will gain practical insights into issues and approaches to food access, production, and cultural foodways. Site visits offer a grounded, place-based understanding of how food systems operate and how they are experienced by diverse community members.

Other learning activities include a critical review of an existing agricultural plan or strategy. This activity involves evaluating the plan’s/strategy’s goals, implementation pathways, and alignment with regional planning and sustainability priorities. Learners could also conduct a comparative analysis of various agricultural zones and land use designations, considering how zoning frameworks influence land access, food security, supply chain resilience, and ecological integrity. Such activities serve to deepen learners’ capacity for policy analysis and evaluation.

**Table 5.** Recommended activities for an urban agriculture planning education program

Area	Activities
Planning and policy	<ul style="list-style-type: none"> <li>• Design an agricultural/food policy for adoption or an urban agricultural zone and set of allowable land use practices</li> <li>• Analysis of an existing agricultural plan/strategy</li> <li>• Analysis of a range of agricultural zones and designated uses</li> <li>• Discuss and identify the difference between a land use plan and a zoning map</li> </ul>
Food system components and issues	<ul style="list-style-type: none"> <li>• Food system mapping exercise – map out your local food system</li> <li>• Mind-mapping food system dynamics</li> <li>• Site visits – local food bank, community meals, community/allotment gardens, farm, farmers’ markets, ethnic food market/food court; etc.</li> <li>• Convene, facilitate, and coordinate a food system discussion around a pressing concern (e.g., climate change, income inequality, food insecurity/hunger, diet-related diseases/health prevention, food sovereignty).</li> </ul>

# FINDINGS

## Developing a Micro-credential Program

There are important considerations related to structural and institutional complexities of offering short, skills-focused programming within post-secondary settings. One of these considerations relates to the distinction between credit and non-credit micro-credentials. This distinction carries significant implications for curriculum development, assessment, enrolment, and institutional recognition. Barriers to developing a for-credit program often stem from governance processes, academic oversight requirements, and differing interpretations of how micro-credentials fit within formal program structures.

Enrolment considerations are important in terms of the feasibility of running a new program, especially in light of recent changes to international student enrolment policies in Canada. While virtual and online delivery formats may provide new avenues for recruitment and accessibility, it is important to note that several of the micro-credentials under development (such as the Planning for Urban Agriculture program) are place-based and specific to the British Columbia policy and planning context. This geographic specificity may limit broader uptake; however, the geographic context is important for ensuring that the educational content is tailored to local planning needs and regulatory frameworks. Such considerations must be carefully balanced in both marketing and curriculum design strategies.

Institutional and faculty capacity is another critical consideration, as it dictates the viability of micro-credential delivery. Many post-secondary institutions have dedicated units for administering continuing education and lifelong learning programs, which are often focused on recruiting working professionals, post-graduate learners, and alumni. Capacity of these administering bodies varies widely among institutions, particularly when it comes to administrative support, instructional design, and learner services. It is important to consider how micro-credentials can be sustainably hosted and delivered, as well as aligned with faculty expertise and workload realities. It is important to identify core competencies, complementary courses, and alignment with institutional learning outcomes that can support seamless pathways for learners while also improving institutional buy-in.

Meaningful recognition of learner achievement is a key consideration in the development of a micro-credential program. The project team is considering various recognition approaches, such as digital badges, professional development credits, or integration into graduate certificate programs. These options are being considered in terms of their perceived value among learners and employers and their compatibility with existing academic policies. Ensuring that learners receive formal, academic recognition for their efforts is key to enhancing the credibility and uptake of the micro-credential offerings.

# CONCLUSIONS & RECOMMENDATIONS

The development of micro-credentials in planning and urban agriculture represents a timely and strategic response to evolving industry needs, institutional innovation, and learner demand. Across the post-secondary sector, there is growing recognition that traditional degree pathways may not fully address the rapidly changing skills landscape, particularly in fields such as sustainable food systems, where interdisciplinary competencies, local policy knowledge, and systems thinking are essential. Through curriculum co-design, stakeholder engagement, and iterative development, this study has identified opportunities and structural challenges related to developing and embedding food systems micro-credentials into post-secondary education. The insights from this work provide a foundation for designing the content, delivery, and positioning of micro-credential programs.

To ensure successful implementation, institutions must engage with the credit versus non-credit distinction with greater clarity and purpose. Alignment with existing curricular offerings can be supported through curriculum mapping, competency scaffolding, and flexible program integration, and such alignment is key to enhancing academic legitimacy and learner uptake. Furthermore, institutional capacity must be carefully considered, as delivering micro-credentials requires subject-matter expertise, administrative coordination, marketing infrastructure, and instructional design support. Partnerships between continuing education units and academic faculties can help bridge operational divides and promote long-term sustainability.

The study identified a range of skills and competencies that should be included in the education and learning of an urban agriculture and planning micro-credential program. By developing these skills, emerging practitioners will be well-positioned to address the complex challenges related to transforming food systems in ways that contribute to local sustainability and resilience. These newly-trained professionals will be equipped to lead participatory planning processes, navigate governance systems, implement inclusive food programs, and design integrated solutions that promote equity, resilience, and sustainability in agricultural and urban contexts.

As food systems and planning practices evolve in response to climate, social, and economic pressures, micro-credentials can serve as valuable tools for professional development and workforce transition toward work that contributes to just and sustainable futures. Based on the findings of this study, the following recommendations serve to inform the development of a micro-credential program:

1. Institutions implement clear policies and guidelines for micro-credential recognition, including digital badges, professional development credits, or integration into existing undergraduate and graduate programs.
2. Micro-credential programs include content related to local contexts, particularly when addressing region-specific planning and policy issues.
3. Cross-institutional collaborations are built to leverage and maximize reach, resource sharing, and curricular coherence.

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# RESOURCES

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