

ASSESSING THE CAPACITY OF MUNICIPALITIES TO RESPOND TO EVOLVING RURAL AND AGRICULTURAL ISSUES

Final Research Report



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Abstract

Municipal governments in Ontario play a key role in agri-food systems planning. Through land use planning, economic development, environmental stewardship, and broader decision making, municipal staff and elected officials have the ability to encourage or hinder agri-food systems in their communities. While the provincial government provides a policy framework, local governments have the ability to determine how best to implement policies in their jurisdiction and have the ability to go beyond provincial mandates. This flexibility allows local governments to implement a range of policies, programs, and plans to support and respond to the agri-food sector. However, little is known about the capacity of municipal governments to pursue agri-food systems planning work.

This research investigates the capacity of municipalities in Ontario related to agri-food systems planning and looks to address four research questions:

1. How can municipal agri-food systems planning capacity be conceptualized?
2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?
3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?
4. What best practices and resources would strengthen municipal agri-food systems planning capacity?

This research is underpinned by a mixed methods methodological paradigm, grounded in pragmatism, and employed a convergent mixed-methods research approach. Data and methods involved in this research include a literature review, survey questionnaires, semi-structured interviews, and secondary data. Data was analyzed using a variety of methods including thematic analysis, data visualization, and statistical analysis.

In total, 290 municipalities participated in this research through at least one of the data collection methods. Findings from this research confirm that municipal capacity to support agri-food systems planning in Ontario is variable. Factors contributing to municipal capacity

include: department resources and characteristics, relationships with other municipal departments and external actors, the role of municipal councils and upper-levels of government, and a commitment to local and regional agri-food systems.

This capacity positions municipalities to facilitate agri-food systems planning processes including the use of regulatory and non-regulatory tools, and leveraging partnerships in support of agri-food systems planning. Additional resources, including training, guidance materials, and funding are needed to support municipal staff and councils undertaking this important work. The Ontario Ministry of Agriculture, Food and Agribusiness and Ontario Professional Planners Institute are identified as key organizations who should work to address these gaps.

A conceptual framework for municipal agri-food systems planning capacity is proposed, and includes an enabling environment (the elements which provide the context), action environment (the elements and processes which contribute to undertaking the work), and interim effects (relationships between elements which contribute positively to municipal agri-food systems planning capacity). This conceptual framework can be used to guide policy and program efforts, as well as inform future research in this area.

In a world that is facing increasingly complex problems—from climate change and socio-political unrest to global health crises—securing our agri-food system is more important than ever. This research contributes to better understanding the role and capacity of local governments in agri-food systems planning.

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List of Abbreviations

AIA - Agricultural Impact Assessment

AMO - Association of Municipalities of Ontario

CIP - Canadian Institute of Planners

CIP - Community Improvement Plan (Section 5.4.3 only)

CLI - Canada Land Inventory

DDO - Development Directors of Ontario

EDCO - Economic Developers Council of Ontario

GHFFA - Golden Horseshoe Food and Farm Alliance

GTA - Greater Toronto Area

LORAPON - Long Range Planners of Ontario

MDS - Minimum Distance Separation

MMAH - Ministry of Municipal Affairs and Housing

MNR - Ministry of Natural Resources

MRA - Ministry of Rural Affairs

NOFIA - Northern Ontario Farm Innovation Alliance

OACA - Ontario Association of Committee of Adjustments

OFA - Ontario Federation of Agriculture

OFDU - On-farm Diversified Use

OFT - Ontario Farmland Trust

OMAF - Ontario Ministry of Agriculture, Food and Agribusiness (post June 2024)

OMAFRA - Ontario Ministry of Agriculture, Food and Rural Affairs (pre June 2024)

OPPI - Ontario Professional Planners Institute

RAIN - Rural Agri-innovation Network

ROI - Rural Ontario Institute

ROMA - Rural Ontario Municipal Association

RPCO - Regional Planning Commissioners of Ontario

UoG - University of Guelph

Executive Summary

Municipalities play a critical role in supporting local and regional agri-food systems that are environmentally sustainable, economically viable, and supportive of local communities and context. Through land use planning, economic development, environmental stewardship, and broader decision making, municipal staff and elected officials have the ability to encourage or hinder agri-food systems in their communities. However, little is known about municipal agri-food systems planning capacity and even less is known about how municipal capacity impacts local and regional agri-food systems.

This research looks to address this gap by exploring municipal agri-food systems planning capacity in Ontario. More specifically this research looks to address four research questions:

1. How can municipal agri-food systems planning capacity be conceptualized?
2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?
 - 2.1. What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?
 - 2.2. Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?
 - 2.3. How does municipal agri-food systems planning capacity vary across the province?
3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?
4. What best practices and resources would strengthen municipal agri-food systems planning capacity?

The goal of this research is to better understand municipal agri-food systems planning capacity across Ontario and to better position municipal planning departments to respond to and

support local and regional agri-food systems. This goal will be achieved through the following five objectives:

1. Develop a conceptual framework for municipal agri-food systems planning capacity in Ontario.
2. Investigate the capacity of municipal planning departments to respond to and support agri-food systems in Ontario.
3. Evaluate the capacity of municipalities to implement Ontario's agri-food systems land use policies (including Minimum Distance Separation (MDS), agricultural impact assessments, agricultural systems approach, and the The Farming and Food Production Protection Act).
4. Explore how municipal agri-food systems planning capacity is supporting local and regional agri-food systems actors, interactions, and functions.
5. Identify strategies to strengthen municipal agri-food systems planning capacity in Ontario.

A variety of methods were used to address the research questions and objectives in a holistic and pragmatic manner, including (1) a literature review of agri-food systems planning and capacity (as it relates to municipal planning); (2) primary data collection including both survey questionnaires and semi-structured interview data (with municipal planning staff and elected officials), as well as the identification of secondary data sources; and (3) data analysis, including thematic analysis, data visualization, and statistical analysis.

Primary data collection efforts for this project resulted in 196 planner surveys, 230 elected official surveys, and 68 interview transcripts. In total, 290 of 444 municipalities in Ontario participated in this research through at least one of the data collection methods. Upper-tier municipalities had the highest participation rate (90%), followed by single-tier southern municipalities (83%), single-tier northern municipalities (70%), and lower-tier municipalities (57%). Participation rates across all four MMAH Municipal Service Office regions were similar.

Findings from this research provides insight regarding how agri-food systems are perceived, valued, and interacted with by municipal planning staff and elected officials, in addition to discussing contemporary agri-food systems planning issues and challenges facing Ontario municipalities. Key issues identified include the continued pressures on the agricultural land base, on-going challenges related to agriculture in the rural area, changing nature of agriculture, land use planning framework in Ontario, larger food systems challenges, and a growing knowledge gap.

This research also identified a number of factors which contribute to municipal agri-food systems planning capacity, including: staff and council knowledge of agri-food systems, planning service delivery, collaboration between planning and other municipal departments, relationships with external actors (including other municipalities and agri-food systems stakeholders), municipal council's priorities and approach to decision making, and individual or organizational beliefs and convictions. These factors are grouped into four overarching themes: planning department structure and personnel; relationships with other municipal departments and external actors; the land use planning framework in Ontario; and commitment to local and regional agri-food systems.

This research confirms that municipal capacity to support agri-food systems planning in Ontario is variable. Of 183 respondents, 156 (85%) indicated that their municipality had less than adequate capacity to respond to and support the agri-food system. Respondents were more likely to report higher levels of capacity if the municipality where they worked had in-house planning staff, was an upper-tier municipality, was located in southern Ontario (MMAH Municipal Service Office West, Central, or East), or was classified as urban. This variability is evident in the reported knowledge related to key agri-food systems land use policies as well as the number of agri-food systems related initiatives a municipality supports.

Municipal planning staff play a variety of roles related to municipal agri-food systems planning initiatives and often work in partnership with other municipal departments, elected officials, and external organizations. Municipal agri-food systems planning initiatives being supported across the province are diverse and include activities related to land use planning policy,

agricultural and food strategies, economic development initiatives, provision of resources, training and education, and environmental stewardship.

This research also identified resources and best practices being used by municipal planning departments to support agri-food systems planning capacity, including: professional networks, provincial resources, relationship building with the local agri-food sector, and continuous learning. There are several additional resources that would be helpful for both planners and elected officials, including: training and educational opportunities, guidance documents, newsletters, relationship building, the sharing of best practices between municipalities, and additional funding to support the agri-food sector as well as municipalities in undertaking important agri-food systems planning work.

As part of this research a conceptual framework for municipal agri-food systems planning capacity is proposed, and includes an enabling environment (the elements which provide the context), action environment (the elements and processes which contribute to undertaking the work), and interim effects (relationships between elements which contribute positively to municipal agri-food systems planning capacity). This conceptual framework can be used to guide policy and program efforts, as well as inform future research in this area.

Chapter 1: Introduction

1.1 Purpose of Chapter 1

The Food and Agriculture Organization of the United Nations suggests that agri-food systems include “primary agricultural production of food and non-food products, the production of food of non-agricultural origin, the food supply chain from producer to consumer and the final consumer of food” (FAO, 2021, p. 9). Agri-food systems include the entire network of resources, people, and activities that are involved in the production, processing, distribution, storage, marketing, consumption, and disposal of food, as well as the outputs of these activities, including socio-economic and environmental impacts (LEI International Policy et al., 2018; Raja et al., 2017; Robert & Mullinix, 2022). Furthermore, agri-food systems actions and interactions occur at different spatial scales (e.g., local, regional, global) and are inclusive of the full array of food production practices (e.g., industrial, agro-ecological).

Global agri-food systems have long been criticized for a number of shortcomings including environmental degradation (greenhouse gas emissions, deforestation, soil erosion and degradation, biodiversity loss, water and air pollution), perpetuating socio-economic inequities (disadvantaging small-scale producers, favouring large multinational corporations, exploiting the global south), failing to address food insecurity and hunger (uneven access, malnutrition, lack of culturally appropriate foods), and contributing to a growing disconnect between people and the food and environment on which they rely. These shortcomings have been exacerbated by increasingly complex and devastating global crises, including COVID-19, socio-political unrest, and climate change (Clapp & Moseley, 2020; Trudeau et al., 2021; Yasmeen, 2023). The 2023 Climate Change Report prepared by the Intergovernmental Panel on Climate Change (IPCC) reconfirms that climate change is already impacting global agri-food systems (extreme weather events, new pests and disease) and is reducing food security (food shortages, crop failures) (IPCC, 2023). However, the relationship between global crises and agri-food systems is complex in that agri-food systems both contribute to and are affected by many global stressors (Tubiello et al., 2022). Agri-food systems transitions are needed to both adapt to and mitigate future impacts.

Academics, UN Agencies, non-governmental organizations, and civil society groups have been calling for agri-food systems change for years (FAO, 2021; Held, 2023; IPCC, 2023; Soma & Wakefield, 2011). While there is consensus that current agri-food systems are not sustainable, there is little agreement around what changes are needed, at what scale, and which actors should lead this change (Brock, 2023). Some are calling for an increased role in technology (e.g., precision agriculture, cellular agriculture, renewable energies) and the need for more efficient practices (Benyam et al., 2021; Fraser & Campbell, 2019; Fraser & Newman, 2023; Saiz-Rubio & Rovira-Más, 2020; Weersink et al., 2018). Others suggest transitioning to more decentralized agri-food systems and agro-ecological models of production are needed to address current power imbalances and transition to more resilient and just food systems (Anderson et al., 2019; Blay-Palmer et al., 2016; Clapp, 2023; Clapp et al., 2018; Clapp & Moseley, 2020; Knezevic et al., 2017; Tittonell, 2020). The 2023 IPCC report argues that land management options (e.g., sustainable agricultural intensification, agroforestry, farm and landscape diversification, and urban agriculture) and demand-side responses (dietary choices, reduced post-harvest losses and food waste) can work together to achieve multiple objectives including, eliminating hunger, promoting good health and wellbeing, and reducing environmental impact (2023, p. 54). Uniting these diverse perspectives is the agreement that business as usual is not an option and that change is needed now.

In this context, municipal governments play a key role in supporting and facilitating agri-food systems change. Through land use planning, economic development, environmental stewardship, and broader decision making, municipal staff and elected officials have the ability to encourage or hinder agri-food systems in their communities. While the provincial government provides a policy framework, local governments determine how best to implement policies in their jurisdiction and have the ability to go beyond provincial mandates. This flexibility allows local governments to implement a range of policies, programs, and plans to support and respond to the agri-food sector. However, little is known about municipal government capacity to pursue agri-food systems planning. This research aims to address this gap through an investigation of municipal agri-food systems planning capacity across Ontario.

The purpose of Chapter 1 is to introduce this doctoral research, including the research topic and context, research questions and objectives, and the structure of the dissertation document.

1.2 Introduction to planning and agri-food systems

The planning profession interacts with and impacts agri-food systems in a variety of ways (FAO, 2019; Hansen et al., 2020; OPPI, 2011; Pothukuchi & Kaufman, 2000; Soma & Wakefield, 2011). Agri-food systems are inherently land-based, both in the sense that agri-food systems components and functions require physical space but also because agricultural production relies on the natural environment and ecosystem services (Connell et al., 2013). Agri-food systems also have important ties to economic sustainability, wellbeing and health, and community resilience (Raja et al., 2018; Sonnino et al., 2019; Trudeau et al., 2021). Planners are fundamentally concerned with all of these things (Caldwell et al., 2020; Hodgson, 2009; Pothukuchi & Kaufman, 2000).

While there are many definitions of planning, the Canadian Institute of Planners (CIP) suggests that “planners safeguard the health and well-being of urban and rural communities, by addressing the use of land, resources, facilities and services with consideration to physical, economic and social efficiency” (CIP, n.d.). Put more simply, planning is interested in the sustainable management of people and land. Sustainable management in the context of planning includes the three pillars of sustainability (social, environmental, and economic) as well as inter- and intra-generational considerations (Collier et al., 2013; Lamine, 2015; Marchese et al., 2018). In practice, planning includes a number of activities (e.g., policy creation and implementation, community engagement and outreach, research, and advocacy) across multiple fields of work (e.g., land development, social planning, resource management, transportation, and economic development). These activities and fields of work intersect with agri-food systems in multiple direct (e.g., protection of prime agricultural lands, on-farm diversification) and indirect (e.g., intensification policies, social planning) ways.

This section provides an introduction to the research topic and context, including agri-food systems in Ontario, the role of the planning profession, capacity in the context of municipal planning, and Ontario’s land use planning framework.

1.2.1 Agri-food systems in Ontario

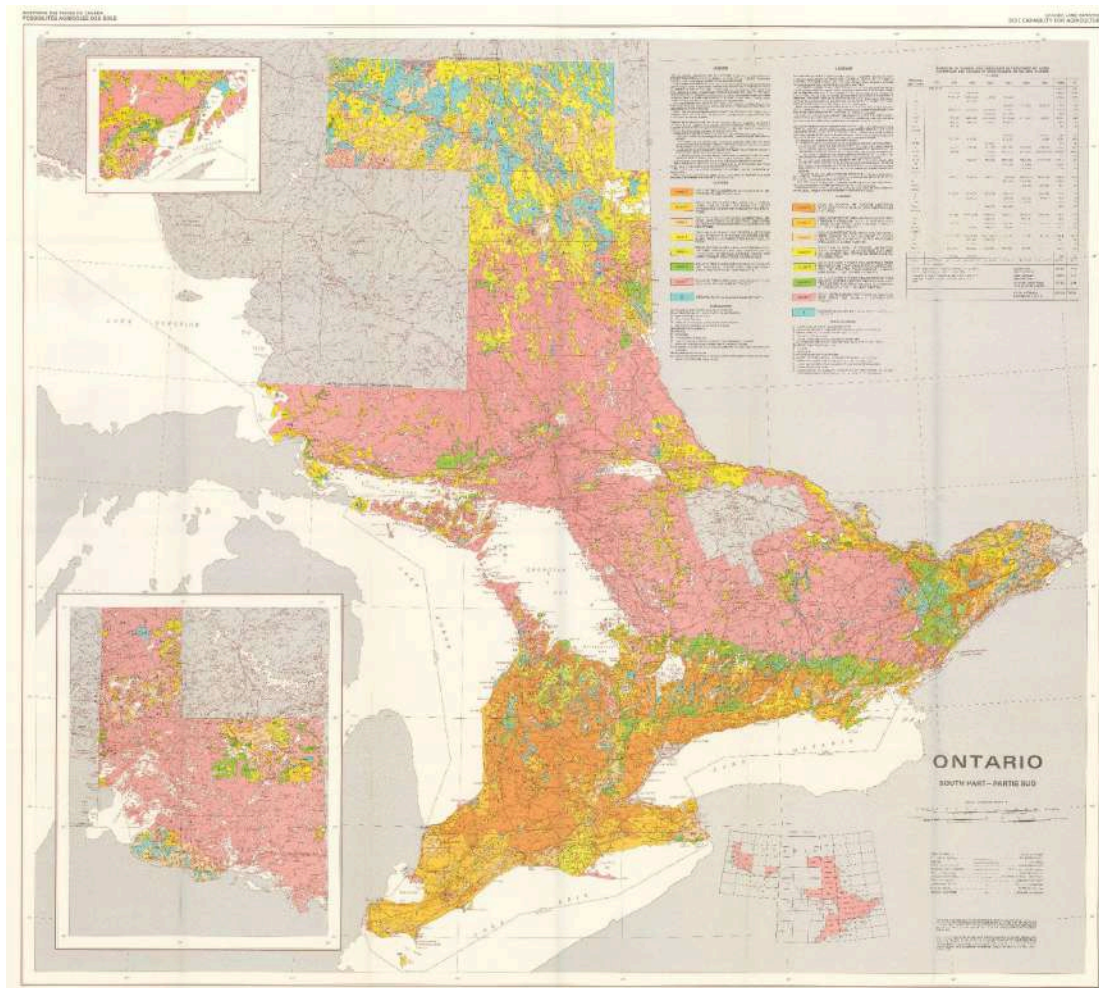
Ontario is home to some of the best agricultural land in Canada and produces over 200 agricultural commodities (Statistics Canada, 2016; OMAFRA, 2022). The agri-food sector in Ontario contributes \$47.7 billion annually to the provincial economy and provides approximately 837,100 jobs (Chen, 2022; OMAFRA, 2020a). Beyond numbers, Ontario's agri-food system plays an important role in contributing to sustainable, resilient, and robust rural and urban communities across the province (OMAFRA, 2022). Supporting the agri-food sector in Ontario is important.

Over 50% of Canada Land Inventory (CLI) class 1 soils are located in Ontario (Walton, 2003; Caldwell & Hilts, 2005; Caldwell et al., 2017; OMAFRA, 2022). The Canada Land Inventory (CLI) is used to rate soil suitability for agricultural production, and includes seven classes of soils based on productive potential for growing common field crops (including corn, wheat, soybeans, oats, barley, and perennial forage crops). Class 1 soils are defined as having “no significant limitations in use for crops” (Agriculture and Agri-Food Canada, 2013). That being said, CLI classes 1-3 are considered prime agricultural land in Ontario, and are able to support crop production. CLI classes 4-7 may still be viable for agricultural production, however their productive capability for field crops is more limited. Figure 1.1 includes a map of the CLI soil classes in Ontario. The majority of CLI class 1-3 soils are located in southwestern Ontario. Based on the Land Capability For Agriculture Canada Land Inventory Report published by Environment Canada in 1976, only 5% of Canada's land base can support crop production (taking into account soil capability and physical limitations) (Environment Canada, 1976). This means that agricultural land in Canada is both a limited and valuable resource. Ontario's highly productive soils, paired with a relatively moderate and stable growing climate, positions the province's agri-food sector as one of the most significant in Canada (OMAFRA, 2022).

The 2021 Census of Agriculture provides some important information for understanding the significance of Ontario's agri-food sector. Ontario accounts for nearly 11.7 million acres of farmland and just over a quarter of the total farms in Canada (Chen, 2022; OFA, 2024; Statistics Canada, 2022). In 2021, there were nearly 50,000 farmers and farm operators in Ontario, the largest share of any Province (Chen, 2022). Ontario is a lead producer of many agricultural

commodities, including soybeans and corn for grain, vegetables and melons, greenhouse products, and multiple livestock categories (chickens, sheep and goats, egg production) (Chen, 2022; Statistics Canada, 2022; Statistics Canada, 2024). In addition to primary production, the agri-food sector in Ontario includes more than 4,500 food and beverage manufacturing businesses (OMAFRA, 2022). Ontario's agri-food sector contributes \$14.5 billion, or just over 40% of the national food and beverage GDP and is the second largest contributor to farm operating revenues in the Country (Chen, 2022; OMAFRA, 2022). In addition to having regional and national significance, the agri-food sector in Ontario is important internationally. In 2021, Ontario's agri-food sector contributed \$19.6 billion in exports, the largest of any province (OMAFRA, 2022).

Figure 1.1 - Map of Canada Land Inventory Soil Capability for Agriculture in Ontario (Agriculture Canada, 1975)



Despite the importance of the agri-food system in Ontario, the sector continues to face a number of challenges. Between 2016 and 2021, several key indicators related to the sector's overall health declined including - the number of farms (-2.5%), the total farm area (-4.7%), the number of farmers younger than 35 years old (-15%), and the number of farmers aged 35 to 54 (-20.9%) (Chen, 2022). Conversely, this same time period saw an increase in farm operators over the age of 55 (+8.1%) and an increase in the number of large farms (exceeding \$1 million in annual revenue) (+19.2%) (Chen, 2022). These trends from 2016 to 2021 are consistent with historic trends in the agri-food sector in Ontario. Since 1991 there has been a decrease in young farmers by nearly 75% (Jensen et al., 2023). Furthermore, Census of Agriculture data shows that between 1996 and 2021, Ontario lost over 2 million acres of farmland (Chen, 2022; OMAFRA, 2017, Caldwell et al., 2022). In addition to trends associated with changing demographics, farmland loss, and farm consolidation, there are a number of larger systems challenges facing the agri-food sector in Ontario (e.g., climate change, workforce development). Municipalities play an important role in supporting and responding to agri-food systems at the local and regional level, including municipal agri-food systems planning.

1.2.2 The role of the planning profession

In North America, discussion about including food systems as part of the planning portfolio can be traced back to the end of the 1990s (Pothukuchi & Kaufman, 1999, 2000). In their seminal work, Pothukuchi and Kaufman define food systems as the “chain of activities connecting food production, processing, distribution, consumption, and waste management, as well as all of the associated regulatory institutions and activities” (Pothukuchi & Kaufman, 2000, p. 113).

Community food security was the primary driver behind Pothukuchi and Kaufman’s work which revealed that few planners in America viewed food systems as part of the planning portfolio (Pothukuchi & Kaufman, 1999, 2000). Since then interest in food systems planning and community food planning has continued to grow (Campbell, 2004; Donald, 2008; Morgan, 2009, 2013; Music et al., 2021; Raja et al., 2017; Reynolds, 2009; Sonnino, 2009; Thibert, 2012).

Today, food systems planning is a space where scholars, planners, decision-makers, activists, economic development and public health professionals can work together to address sustainable development through the lens of food systems (Blay-Palmer, 2009; Donald, 2008;

Lang, 2014; Morgan, 2013; Wegener, Raine, et al., 2012). Food systems planning encompasses a dynamic portfolio of concerns, including the impacts of urban sprawl (Port & Moos, 2014; Rivers, 2004), economic development (Desjardins et al., 2011; Soma & Wakefield, 2011; Wekerle, 2004), public health (Desjardins et al., 2011; Hodgson, 2009; Mui et al., 2018; Wegener et al., 2013), community vitality and development (Wekerle, 2004), agriculture (Caldwell et al., 2020, 2021; Caldwell & Hiltz, 2005; Connell et al., 2013; Lang, 2014; Waldick et al., 2017), sense of place (Irvine et al., 1999), social justice (Blay-Palmer, 2009; Raja et al., 2017), and environmental sustainability (Desjardins et al., 2011; Waldick et al., 2017), among others. It is important to acknowledge that “agriculture” has had a slightly different trajectory in planning discourse and was incorporated into the planning portfolio slightly earlier than other food systems components (Bunce, 1998; Caldwell et al., 2017). Agri-food systems planning today strives to provide a holistic and systems-based perspective which recognizes the complex, interconnected nature of agri-food systems stakeholders and processes, beyond traditional rural-urban divides (Hansen et al., 2020, 2021; Lang, 2014; Wegener et al., 2013).

Municipalities have a key role to play in agri-food systems planning, particularly as it relates to local and regional agri-food systems (Buchan et al., 2019; Hansen et al., 2020; Kaufman, 2009; Pothukuchi & Kaufman, 2000; Trudeau et al., 2021). Hansen et al. (2020) argue that “As food systems planning has emerged as a legitimate field of practice over the past two decades, so has the opportunity to plan for a food system that works toward community, economic and environmental health and wellbeing” (p.1). While there is established interest in and research related to agri-food systems, food systems, and agricultural planning, there is limited understanding about what capacities are needed to undertake this work (Caldwell et al., 2021a; Caldwell et al., 2021b, Zink et al., 2022). This research looks to address this gap and will focus on municipalities as the most local level of government involved in agri-food system planning activities.

1.2.3 Capacity in the context of municipal planning

There is a growing body of literature that recognizes the role of planning capacity in contributing to municipal planning objectives, including growth management and residential intensification (Brody et al., 2006; Filion et al., 2004, 2020; Göçmen & LaGro, 2016; Hawkins,

2014; Lee, 2018), stormwater management (Brody et al., 2010; Kim & Li, 2016), coastal land use planning (Norton et al., 2018; Tang, 2008), climate change policies (Tang et al., 2009), and agriculture and agri-food priorities and issues (Caldwell et al., 2020, 2021a, 2021b; Caldwell & Procter, 2013; Davidson, 1988). These articles largely recognize that:

When viewed from an institutional perspective, professional planners can be at the centre of personal and inter-organisational networks and interactions, and because planners in part create the rules that structure government involvement in these relations, they can have a significant influence on the outcomes of planning processes. (Hawkins, 2014, p. 1686)

Furthermore, this body of literature argues that planning staff capacity is associated with more progressive policies and plans, more effective stakeholder management (including conflict resolution), and higher rates of plan implementation (Hawkins, 2014; Lee, 2018; Loh, 2015). Specific to agri-food systems planning, Caldwell et al. (2021b) report that limited capacity in the Greater Golden Horseshoe impacts the ability of municipalities to respond to emerging agricultural priorities (p. 258). This research builds on these previous works to further explore and conceptualize planning capacity in the context of agri-food systems planning in the Province of Ontario.

1.2.4 Ontario's land use planning framework

In investigating municipal agri-food systems planning capacity in the Province of Ontario it is important to address the existing land use planning framework. Under Canada's federal system of government, land use planning is considered a provincial responsibility (Macdonald et al., 2021; Marr et al., 2016; Pond, 2009). In Ontario, the provincial government transfers the responsibility of administering and regulating land use planning to municipalities (Marr et al., 2016; Planning Act, 1990). As a result municipal governments are responsible for implementing provincial directives regarding land use planning within their jurisdiction.

As part of this, the Province provides policies and guidelines regarding land use planning that municipalities must be consistent with when implementing land use planning at the local level

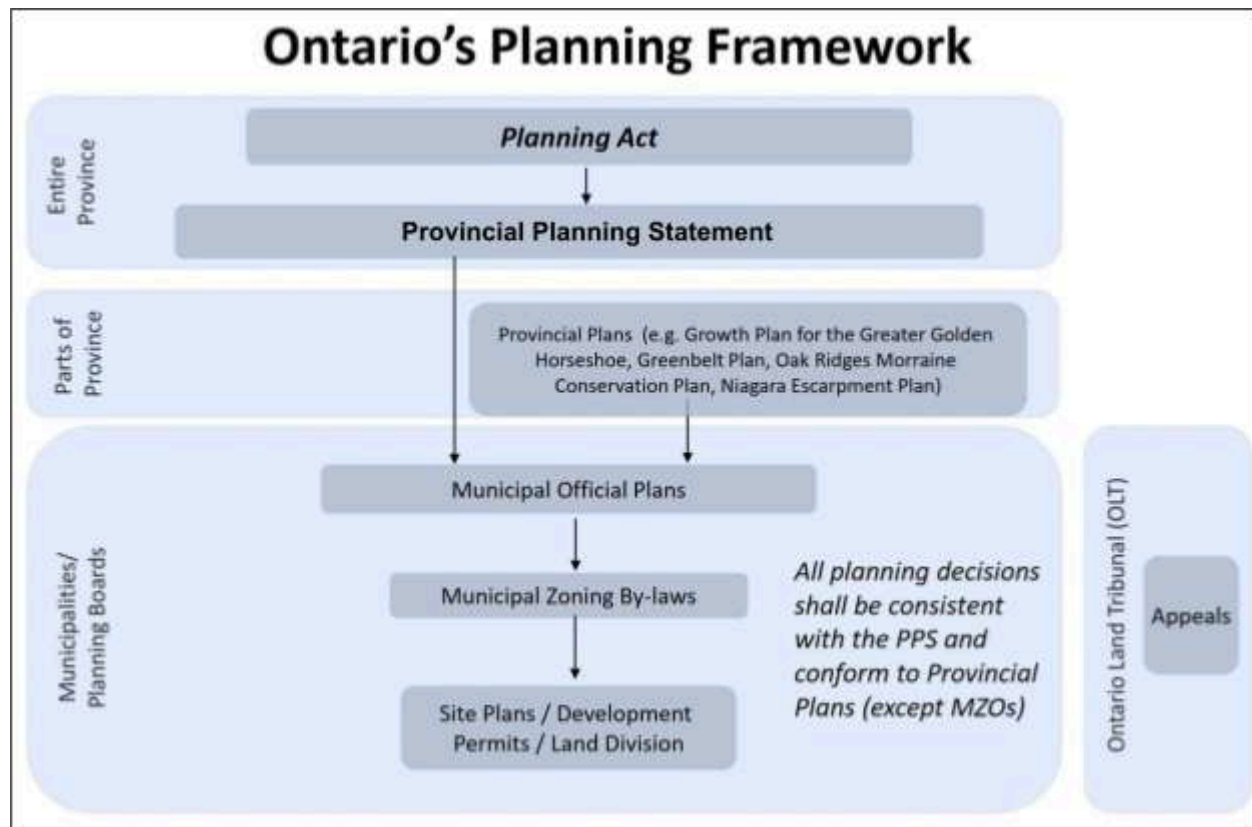
(Wegener et al., 2013; Planning Act, 1990). The Ministry of Municipal Affairs and Housing (MMAH) is the provincial ministry responsible for municipal governments including land use planning policy (Marr et al., 2016). However, other ministries including the Ontario Ministry of Agriculture, Food and Agribusiness (OMAFRA) and the Ministry of Natural Resources (MNR) are considered “partner ministries” in supporting land use planning in Ontario and provide guidance on matters related to land use planning that fall within the purview of that specific ministry (Marr et al., 2016). For example, OMAFRA provides technical advice and support on provincial land use planning matters related to agricultural and agri-food policy interests.

The key guiding documents related to land use planning in Ontario include the Planning Act (1990) and the Provincial Planning Statement (2024). There are also regionally specific provincial plans such as Places to Grow Act (2005)/A Place to Grow Growth Plan for the Greater Golden Horseshoe (2020, revoked October 2024), the Greenbelt Act (2005)/Greenbelt Plan (2017), the Oak Ridges Moraine Conservation Act (2001)/Oak Ridges Conservation Plan (2017), and the Niagara Escarpment Planning and Development Act (1990)/Niagara Escarpment Plan (2017). The Planning Act and the PPS, along with the Provincial Plans in their respective geographies, provide the land use planning framework for the Province of Ontario. Figure 1.2 outlines Ontario’s land use planning framework, including the relationship between Provincial legislation and municipal land use planning.

Section 4.3 of the PSS addresses agriculture and provides key policy direction to planning authorities regarding food systems planning. More specifically the PPS, directs municipalities to designate and protect prime agricultural areas for long term use for agriculture, provides direction related to permitted uses, and limits the opportunity for lot creation within prime agricultural areas. PPS agricultural policies, and Provincial direction more broadly, focus on Prime Agricultural Areas which includes CLI class 1, 2, and 3 soils, as well as associated lands (e.g., CLI 4 through 7 lands and areas with a local concentration of farms). The Prime Agricultural Area also includes specialty crop areas that recognize areas of the province where specialty crops (e.g., tender fruit, vegetable crops) are predominantly grown. While the PPS also provides policies for rural lands (that are not included within the Prime Agricultural Area), these policies are more permissive and do not have the same focus on agricultural protection. It is

important to note that Provincial land use policies and approaches provide a framework to manage the loss of agricultural land and impacts on the agricultural system, but do not provide permanent protection for agricultural lands.

Figure 1.2 - Ontario Planning Framework (adapted from Boyd, 2024)



The PPS (2024) has a number of key changes from the previous PPS (2020), including a new requirement for planning authorities to use an agricultural systems approach, provisions for additional residential units on farms, and the requirement for an Agricultural Impact Assessment for non-agricultural uses within the Prime Agricultural Area. The 2024 PPS also includes a policy which encourages municipalities to support local food, facilitate near-urban and urban agriculture, and foster a robust agri-food network. At time of writing, these changes are still very new and their implications for agri-food systems planning in Ontario are not yet determined. Furthermore, data collection for this project was completed when the PPS 2020 was in effect.

In addition to the direction provided by Provincial legislation, the land use planning framework in Ontario also allows Provincial ministries to provide further direction through guidance materials. Specific to agricultural and agri-food interests, OMAFA has supports several guidance documents including the Draft Agricultural Impact Assessment (AIA) Guidance Document (2018), the Minimum Distance Separation (MDS) Document Formulae and Guidelines (2016), Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas (2014), and the Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe (2020). These guidelines provide additional direction, discussion, and support to municipalities looking to implement land use planning at the local level.

Municipal governments are responsible for translating and implementing provincial policy and directives within their jurisdiction. Municipalities carry out this role through establishing local official plans and zoning by-laws, as well as related programs, policies, and plans to support their implementation. Specific to agri-food systems planning, municipalities may pursue additional initiatives such as agricultural strategies, agricultural advisory committees, agri-food systems round tables, biodiversity strategies, water quality programs, buy local programs, and agricultural related economic development initiatives, among others. While municipalities are uniquely positioned to support and respond to the local agri-food system, their ability to do so is contingent on their internal capacity. This research looks to better understand the capacity of municipalities across Ontario to undertake municipal agri-food systems planning work.

Both Appendix I and Appendix J include more information about the land use planning framework in Ontario. More specifically, Appendix I includes a supplementary literature review prepared by Natasha Gaudio Harrison and Regan Zink looking at academic and grey literature (e.g., industry reports, policy papers) related to planning for agri-food systems in Ontario. Appendix J includes a toolkit titled Planning for Agri-Food Systems in Ontario, prepared by a group of MSc students in the Rural Planning and Development program at the University of Guelph under the leadership of Regan Zink and Dr. Sara Epp.

1.3 Research question and objectives

This research is premised on the idea that “a thriving agricultural industry depends on the knowledge and support provided by municipal governments” (Caldwell et al., 2021a, p. 7). In Ontario, municipalities are the most local level of government and they play a critical role in supporting agri-food sector growth that is environmentally sustainable, economically viable, and aligned with the priorities of rural communities (Buchan et. al., 2015; Raja et al., 2008; Wallace, 2024; Zink et al., 2022). Municipalities are involved in supporting and facilitating local and regional agri-food systems through activities including land use planning, economic development initiatives, programming, and policy making (Caldwell et al., 2020; Caldwell et al., 2021b; Zink et al., 2022). Having capacity to undertake this work is essential to the success of municipalities in supporting the agri-food sector, managing change, and implementing provincial priorities.

In 2020, Caldwell et al. completed a pilot study that revealed that municipal capacity across the Greenbelt region of Ontario was varied in terms of available resources, staff knowledge, networks and relationships with agri-food sector stakeholders, and political will to support agri-food systems (Caldwell et al., 2021a; Caldwell et al., 2021b). The pilot study also confirmed that while municipalities play a significant role in planning and decision making related to local and regional agri-food systems, relatively little is known about their capacity to do so (Caldwell et al., 2021a; Caldwell et al., 2021b). This doctoral research looks to build on this important work and provides a more comprehensive and in-depth analysis of municipal agri-food systems planning capacity across Ontario.

This section discusses the role of the Ontario Agri-Food Innovation Alliance in informing the research, identifies the research questions and objectives, and articulates the significance of this research and who it will benefit.

1.3.1 Ontario Agri-Food Innovation Alliance Research Call

Following the pilot study completed by Caldwell et al. in 2020 the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)¹ put out a call for research to better understand the capacity of Ontario municipalities to plan for agriculture as part of the 2020 Ontario Agri-food Innovation Alliance Tier 1 Program Guide. More specifically, OMAFRA (2020b) posed the following research question:

To what extent do municipalities vary in their capacity to implement Ontario's provincial agricultural and rural land use policies; which policies are the most challenging for municipalities to implement; and what can be done to increase municipal capacity for more effective implementation? Municipal capacity to successfully implement crisis-related strategies/action plans is likely to vary widely; identifying/understanding the reasons for different levels of capacity and risk will help to target provincial government support.

This doctoral research builds off of this research question and looks to explore municipal agri-food systems planning capacity across Ontario, as well as develop a conceptual framework for municipal agri-food systems planning capacity that can be used to inform planning practice and research. A conceptual framework is a “tentative theory” which explains a complex idea or process, including the elements involved and the relationships between them (Maxwell, 2005, p. 39). This research topic is informed by literature and research related to both (1) agri-food systems planning and (2) capacity in the context of municipal planning. While a brief synopsis of both research areas was included above (in Section 1.2), Chapter 2 provides a more detailed discussion. It should also be acknowledged that this research was partially funded by the Ontario Agri-Food Innovation Alliance Research Program.

¹ The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) was divided into two ministries in June 2024. The Ontario Ministry of Agriculture, Food and Agribusiness (OMAFA) and the Ministry of Rural Affairs (MRA).

1.3.2 Purpose statement

In a world that is facing increasingly complex problems—from climate change and socio-political unrest to global health crises—securing our agri-food system is more important than ever. A report by FAO (2021) regarding The State of Food and Agriculture states that “In an ideal world, all agri-food systems would be resilient, inclusive and sustainable, producing sufficient safe and nutritious food to meet the needs of all for an active and healthy life – without compromising the food security, health and nutrition of future generations” (p. 1). This definition offers a starting point for what agri-food systems should look like. Within this context, this research builds upon existing literature that argues:

1. Current agri-food systems have a number of shortcomings and are widely criticized for being unsustainable (Clapp & Moseley, 2020; FAO, 2021; Held, 2023; IPCC, 2023; Yasmeen, 2023).
2. Local and regional agri-food systems have an important role in transitioning to more sustainable agri-food systems (Blay-Palmer et al., 2016; Clapp & Moseley, 2020; Knezevic et al., 2017; Soma & Wakefield, 2011; Sumner, 2012).
3. The planning profession has a role to play in supporting local and regional agri-food systems (Buchan et al., 2015; Hansen et al., 2020, 2021; Lang, 2014; Raja et al., 2008).

While there is well established interest in agri-food systems planning, it is less clear what capacity is needed to undertake this work (Caldwell et al., 2020, 2021a, 2021b; Soma & Wakefield, 2011; Zink et al., 2022). This research looks to address this gap by exploring municipal agri-food systems planning capacity. More specifically this research looks to address four research questions:

1. How can municipal agri-food systems planning capacity be conceptualized?
2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?
 - 2.1. What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?

- 2.2. Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?
- 2.3. How does municipal agri-food systems planning capacity vary across the province?
3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?
4. What best practices and resources would strengthen municipal agri-food systems planning capacity?

1.3.3 Research objectives

In the context of increasing volatility and instability (on numerous fronts including political, environmental, social, and economic), local and regional agri-food systems play an important role in community resilience and wellbeing (Zink et al., 2022). Agri-food systems are important for a number of reasons including their essential role in feeding the population, connections to stewardship and the natural environment, and contributions to local and national economies (Berry, 2009; IPES-Food, 2024). Municipalities play a key role in agri-food systems planning, particularly as it relates to local and regional agri-food systems (Buchan et al., 2019; Hansen et al., 2020; Kaufman, 2009; Pothukuchi & Kaufman, 2000; Trudeau et al., 2021; Black & Simons, 2024). Caldwell et al. (2021a, 2021b) argue that the capacity of municipal planning departments has the potential to enhance or hinder local and regional agri-food systems.

The goal of this research is to better understand municipal agri-food systems planning capacity across Ontario and to better position municipal planning departments to respond to and support local and regional agri-food systems. This goal will be achieved through the following five objectives:

1. Develop a conceptual framework for municipal agri-food systems planning capacity in Ontario.
2. Investigate the capacity of municipal planning departments to respond to and support agri-food systems in Ontario.

3. Evaluate the capacity of municipalities to implement Ontario's agri-food systems land use policies (including Minimum Distance Separation (MDS), agricultural impact assessments, agricultural systems approach, and the Farming and Food Production Protection Act).
4. Explore how municipal agri-food systems planning capacity is supporting local and regional agri-food systems actors, interactions, and functions.
5. Identify strategies to strengthen municipal agri-food systems planning capacity in Ontario.

1.3.4 Who will benefit

Multiple groups will benefit from this research, including: OMAFA, municipal planners and councils, agri-food system stakeholders, agri-food systems planning researchers, and the general public. A brief summary of the benefits to each group is provided below.

OMAFA will have more knowledge of municipal agri-food systems planning capacity in Ontario as well as the factors that contribute to and/or hinder municipal agri-food systems planning capacity. As part of this, OMAFA will better understand which agri-food systems policies municipalities find challenging to address. The research will also provide insight about how to improve municipal capacity to effectively implement provincial priorities. This information can be used to improve training and guidance materials and create new tools to support municipal planning departments.

Municipal planners and councils will benefit from better understanding their own agri-food systems planning capacity. Furthermore, municipal planners and councils will benefit from identified strategies and best practices to strengthen their capacity to respond to agri-food systems in Ontario and to make more supportive decisions and recommendations.

Agri-food systems stakeholders will benefit from a more knowledgeable, supportive, and predictable planning system in Ontario. Municipal planning staff and councils will be better equipped to respond to and support local and regional agri-food systems.

Agri-food systems research will benefit from theoretical and conceptual contributions related to municipal agri-food systems planning capacity. Researchers will also benefit from a more in-depth understanding of municipal agri-food systems planning capacity in Ontario including new data and practice based insights regarding municipal agri-food systems planning across the province (e.g., programs, policies, and plans).

The general public will benefit broadly from the research in the ways that it contributes to and advances both academic and industry work related to local and regional agri-food systems. This research contributes to the long-term vitality and viability of local and regional agri-food systems in Ontario.

1.3.5 Why is this research important?

This research not only contributes to the literature and academic discourse regarding municipal capacity and agri-food systems planning, it also impacts decision makers, municipal staff, and agri-food systems stakeholders. While this research project is based in Ontario, the outcomes have national and global implications, not only by improving municipal government support for local and regional agri-food systems in Ontario, but also in providing a framework for similar work in other contexts.

Knowledge translation activities associated with this research are ongoing and include presentations at both academic and industry conferences, academic publications, and blog posts and magazine articles, as well as the creation of a toolkit for municipal planners (included in Appendix J).

1.4 Report structure

This report includes eight chapters which collectively improve our understanding of municipal agri-food systems planning capacity across Ontario. The contents of this research were developed with the goal to better position municipal planning departments to respond to and support local and regional agri-food systems. This first chapter looked to introduce the topic, questions, goals and objectives guiding this research. Building on this, Chapter 2 provides a literature review of agri-food systems planning and capacity in the context of municipal planning

and proposes an initial conceptual framework for municipal agri-food systems planning capacity. Chapter 3 discusses the relevant methodological paradigm, methods of data collection, data analysis, and research limitations. Chapters 4 through 6 discuss research findings including insights regarding municipal agri-food systems planning capacity in Ontario (Chapter 4), municipal initiatives to support agri-food systems (Chapter 5), and best practices and resources to strengthen municipal agri-food systems planning capacity (Chapter 6). Chapter 7 builds on these findings by discussing the implications of the research results, including a modified conceptual framework for municipal agri-food systems planning capacity, lessons learned for planning practice, and areas for future research.

Chapter 2: Literature Review

2.1 Purpose of Chapter 2

The primary purpose of Chapter 2 is to explore agri-food systems planning and capacity as discussed within the literature. This chapter begins with a discussion of rurality and agri-food systems, followed by an overview of agri-food systems planning and capacity as a conceptual tool to inform our thinking about agri-food systems planning. This chapter looks to address two questions related to municipal agri-food systems planning capacity:

1. What is agri-food systems planning and what does it look like? What are the roles and tools available to planners?
2. How can capacity, as a conceptual tool, inform our understanding of agri-food systems planning?

Building on this discussion, a conceptual framework for municipal agri-food systems planning capacity is proposed.

The bodies of knowledge addressed in this chapter include agri-food systems planning and capacity (as it relates to municipal planning). Planning is a diverse field of study that overlaps and bleeds into adjacent disciplines (Alexander, 1992). As such, literature from a range of disciplines and fields of research are included, including those from: urban/rural/regional planning, sociology, geography, food studies, and political science, among others. This chapter primarily leans on North American publications as this research is most relevant to the Ontario setting. That being said, alternative perspectives and key papers from other geographic locations have been considered and included as relevant.

Throughout this chapter agri-food systems planning is considered holistically without assigning a value to different types of agri-food systems. Literature regarding agri-food systems sustainability is divided and the purpose of this chapter is not to argue for a singular approach (Brock, 2023). As with many “wicked” or “complex” problems - which involve complex, interconnected issues - it is likely that multiple and diverse solutions are needed (Rittel & Webber, 1973). This approach is also supported by systems thinking which argues that “a

diverse system with multiple pathways and redundancies is more stable and less vulnerable to external shock than a uniform system with little diversity” (Meadows, 2009, pp. 4–5).

It should be noted that this Chapter is a modified version of the Qualifying Exam paper prepared by Regan Zink as part of the degree requirements for the degree of Doctor of Philosophy in Rural Studies. The original Qualifying Exam paper (submitted July 3, 2023) is included in Appendix F.

2.2 A note on agriculture and rural

The purpose of Section 2.2 is twofold: first to address the concept of rurality as it relates to Rural Studies research and second to challenge the urban-rural dichotomy as it relates to agri-food systems (Shellabarger et al., 2019). This section provides an overview of discourse related to rurality and agri-food systems and addresses the assumption of this research that agri-food system planning is relevant to both urban and rural settings.

2.2.1 Defining rural

Discussion about the conceptualization of “rural” or “rurality” in research has been ongoing for decades (Cloke, 2006; Delgado-Viñas & Gómez-Moreno, 2022; Halfacree, 1993, 2009; Hoggart, 1990; Nelson et al., 2021; Sharp & Clark, 2008). It is widely recognized that “rural” is a social construct and as a result there is no one definition or metric for what is considered rural. Over the years, scholars have suggested many different definitions of rural, most of which can be categorized as being either descriptive or socio-cultural in nature (Cloke, 2006). Descriptive definitions of rural include more tangible characteristics of a community, including primary industries (e.g., agriculture, natural resources), low population density, dispersed development patterns, and/or proximity to urban centers (Halfacree, 1993). In contrast, socio-cultural definitions of rural are rooted in socio-cultural characteristics (e.g., traditional values) and individual experiences and perceptions of rurality (e.g., close-knit community relations) (Halfacree, 1993).

These two categories of rural, the descriptive and the socio-cultural, correspond to what Bell (2007) refers to as the first rural (descriptive, material) and second rural (socio-cultural, ideological). In Bell’s paper they argue that the first rural, most often evoked by American

scholars, is focused on physical and spatial characteristics of rural, including population density, land use, and the built form. Bell (2007) goes on to elaborate that urban and rural, in the first rural, are seen as dichotomous and exclusive of one another, so that a line can be drawn on a map delineating the two. Furthermore, Bell (2007) suggests that “first rural is a fundamentally relative view of rurality, in which the rural is always understood with respect to ... the urban” (p. 405). In Bell’s work, the second rural, which is associated with European scholarship, “calls upon the connections we have long made between rural life and food, cultivation, community, nature, wild freedom, and masculine patriarchal power, and the many contradictions we have also so long associated with the rural, such as desolation, isolation, dirt and disease, wild danger, and the straw-hatted rube” (p. 409). Bell goes on to propose the “rural plural” or the concept that both the first and second rural need to be embraced to create a complete and dynamic understanding of rural:

The rural plural defends and it extends. It finds boundaries and it overcomes them. It constructs categories and it reconstructs them. It is a politics of land tenure, of labor markets, of community and neighborhood development, of agricultural change, of food sheds, of good food for school lunches, of forest fires and environmental disasters, of refugees, of resource control and management, of pollution, of national parks, ... of the social power and social knowledge involved in all of this, and of so, so much more. ... The epistemological point of the rural plural is not to gobble everything into the rural, and to say that is all that is ... rather, its argument is that like all really big social concepts—power, capital, gender, race and ethnicity, class, for example—the rural is something we can see pretty much everywhere in social life, and maybe indeed everywhere. (2007, p. 413)

Both the first rural (descriptive, material) and the second rural (socio-cultural, ideological), as well as the rural plural, can be and often are associated with agriculture. Halfacree (1993) found that agriculture was one of six descriptive definitions of rural (p. 24) and was most often associated with land use and social relation studies. More recently, Nelson et al. (2021) completed a literature review of quantitative measures of rurality and found that 18% of the papers that met their inclusion criteria included “agriculture, forested, or natural land” as a

dimension of rurality (p. 354). In the above discussion of Bell's work, agriculture is related to the first rural when considering land use patterns and to the second rural in the association between rural life and food and cultivation (among others). There is no doubt that agriculture has long been associated with rurality (Cloke, 2006).

In fact, in some cases, the association between agriculture and rural results in the conflation of rural with agriculture. For example, Waldheim (2019) states:

The agrarian and the urban are two categories of thought that have more often than not been opposed to one another. Across many disciplines, and for many centuries, the city and the country have been called upon to define each other through a binary opposition. (p. 63)

The relationship between agriculture and rural as dichotomous to urban is possibly explained by the fact that increased agricultural productivity is often viewed as one of the precursors to the formation of cities (Fields, 2012; Steel, 2008). However, this dichotomous view of urban and rural, or urban and agricultural, has not gone without criticism.

For decades, urban-rural discourse has recognized the blurring boundaries between urban and rural (Brenner & Schmid, 2014; Cloke, 2006; Delgado-Viñas & Gómez-Moreno, 2022; Hoggart, 1990; Tacoli, 1998). One approach to address this blurring is the rural-urban continuum. The rural-urban continuum is a concept that acknowledges the diverse and varied nature of settlements, ranging from remote rural to highly urban (Castree et al., 2013). Furthermore, this approach acknowledges that there is no clear boundary between urban and rural spaces, suggesting that settlements can exhibit both 'urban' and 'rural' characteristics (Halfacree, 2009, p. 220). The rural-urban continuum also supports thinking about how settlements across space are interrelated and intertwined with one another (Castree et al., 2013). Today, the rural-urban continuum is generally accepted by rural/urban scholarship (Delgado-Viñas & Gómez-Moreno, 2022; Nelson et al., 2021).

It is important here to acknowledge the work of German sociologist, Ferdinand Tönnies, whose 1887 book *Gemeinschaft und Gesellschaft* provided the groundwork for the rural-urban continuum. Tönnies's thesis argued that "human societies had changed through history from

being characterized by *Gemeinschaft* associations – communities built around kinship, neighborhood, cooperative behavior, and place attachment – to becoming *Gesellschaft* associations – societies of impersonal and instrumental relations founded on formal contract and exchange” (Halfacree, 2009, p. 119). The focus Tönnies places on the shift from “rural” (*Gemeinschaft*) to “urban” (*Gesellschaft*) is corroborated by Delgado-Viñas & Gómez-Moreno (2022) who completed a paradigmatic, methodological, and bibliographic review of urban and rural interactions and found that an urban-centric standpoint underpinned most studies of rural areas. In fact, some scholars argue that urbanization has become a global phenomenon in that no settlement or socio-spatial arrangement is left untouched by processes of urbanization (Brenner & Schmid, 2014). A similar discussion is taking place among scholars looking at the intersection of rural and agriculture.

2.2.2 The relationship between rural and agriculture

Friedland’s 2002 work titled *Agriculture and Rurality: Beginning the “Final Separation”?* calls to question the association of agriculture and rural, asking “When is a farm a farm? When is rural rural?” (p. 350). Friedland’s work questions the alignment between what we believe/think/imagine to be rural and what (modern) agriculture has become. They argue that “even though “agribusiness” and “agriculture” are both concerned with the production of food and fiber, the social relationships in the two entities differ qualitatively and quantitatively” (Friedland, 2002, p. 353). This discussion continues to be relevant today as agricultural operations are shifting towards either large-scale, intensive production or small-scale, diversified production in an attempt to remain viable (Shellabarger et al., 2019). Earlier discussions regarding the distancing of “rural” and “agriculture”, include Lowry Nelson’s (1958) commentary in the Minneapolis Sunday Tribune:

... The farmer can no longer be considered as a different breed,” maintains Lowry Nelson, eminent rural sociologist. “He is no more individualist, fatalistic, conservative, democratic, puritanical, thrifty, frugal, suspicious of strangers, outspoken or susceptible to mass hysteria than any other segment of society. (Asleson, 1958; Bell, 2007, p. 406).

Shellabarger et al. (2019) continue this discussion and look specifically to explore “the blending of rural and urban identities through processes of rural deagrarianization and urban reagrarianization” (p. 91). In contrast to the previously discussed urban-centric approaches to understand the blending of urban and rural identities, Shellabarger et al. (2019) focuses on processes of agrarianization and adopts a pluralistic definition of rural, inclusive of both the material (first) and ideological (second) rural (Bell, 2007). In the case of agri-food systems, the rural plural embraces connections and commonalities across space and creates opportunities for effective problem solving of shared agri-food systems challenges (e.g., power relations, access to resources) (Shellabarger et al., 2019). This approach is supported by Hoggart (1990) who challenges rural scholarship to look for similar social processes and shared experiences across space and place.

Adding to this discussion, the *FAO Framework for the Urban Food Agenda* (2019) speaks to the role of (agri-) food systems in breaking the rural-urban divide. In this context, agri-food systems are seen as contributing to more sustainable, resilient, and inclusive territories. While there is a notion that challenging the rural-urban divide is essential to addressing agri-food systems challenges, Halfacree (2009) reminds us that:

This deeply culturally embedded perceptual sense of urban–rural difference can, to some extent, be seen to be reinforced further by, and indeed also informs, key institutional practices, such as land-use planning, where a desire to retain a clear spatial demarcation between town and country is reflected in such things as Green Belt policies and the generally strict regulations preventing urban ‘sprawl’ into the countryside.
(p.123)

This quote provides a salient reminder that land use planning policy often employs what would be considered the first rural (descriptive, material) and that the demarcation between rural and urban has a very important role to play in ensuring agricultural land remains available for future generations. Nelson (2021) suggests that descriptive, quantitative measures of rural “remain popular with both researchers and policy makers as they provide opportunities to assess and develop practical applications at scale” (p. 352). Conceptualizations, definitions, and measurements of rural areas have important implications for policy and program development

across all levels of government (Lichter & Ziliak, 2017; Nelson et al., 2021). In this light, it is important to acknowledge the important role of rural land use policies in agri-food systems planning and suggest that there are important synergies that can be drawn by looking across urban and rural spaces and places when looking to understand and address agri-food system challenges. The following sections of this chapter will look to address agri-food systems planning, inclusive of urban, rural, and regional spaces, places, and scholarship.

2.3 Agri-food system planning

The purpose of Section 2.3 is to address the question “What is agri-food systems planning and what does that look like? What are the roles and tools available to municipal planners?” This section relies heavily on the article titled *Local Agri-food Systems as a Municipal Priority - Considering the Role, Approach and Capacity of Municipal Planning Departments* prepared by Zink et al. in early 2022. This paper includes the findings of a systematic literature review looking at “the role and approach of municipal planning departments in agri-food systems in Ontario” (Zink et al., 2022, p. 1).

2.3.1 What is agri-food systems planning?

As mentioned in Chapter 1, discussions about including food systems as part of the planning portfolio in North America can be traced back to the late 1990s (Pothukuchi & Kaufman, 1999, 2000). The following decades brought debate and elaboration as to what exactly food systems planning is and what it involves (Buchan et al., 2019; Campbell, 2004; Issac et al., 2022; Morgan, 2009; Music et al., 2021; Reynolds, 2009; Sonnino et al., 2019; Thibert, 2012). Today, food systems planning is defined as:

...the collaborative planning process of developing and implementing local and regional land-use, economic development, public health, transportation, and environmental programs and policies to: (1) preserve existing and support new opportunities for local and regional urban and rural agriculture; (2) promote sustainable agriculture and food production practices; (3) support local and regional food value chains and related infrastructure involved in the processing, packaging, and distribution of food; (4) facilitate community food security, or equitable physical and economic access to safe,

nutritious, culturally appropriate, and sustainably grown food at all times across a community, especially among vulnerable populations; (5) support and promote good nutrition and health; and (6) facilitate the reduction of solid food-related waste and develop or manage a reuse, recovery, recycling, and disposal system for food waste and related packaging. (American Planning Association, n.d.)

Some scholars have argued that food systems planning is not new to the planning profession, but rather the two are becoming reacquainted (Mendes et al., 2011; Steel, 2008; Thibert, 2012; Vitiello & Brinkley, 2014). Ebenezer Howard's Garden City (and the New Towns that followed) and Frank Lloyd Wright's Broadacre City are frequently cited examples of earlier concern for food systems both in planning theory and practice (Mendes et al., 2011; Steel, 2008). Steel (2008) provides a detailed discussion regarding the intimate relationship between human settlement patterns and food systems, and suggests that "without farmers and farming, cities would not exist" (p. 7). Vitiello and Brinkley (2014) offer a similar discussion in their paper, titled *The Hidden History of Food System Planning*, where they discuss food systems planning as part of both colonial and late 19th century planning practice. They argue that food and agriculture were key parts of "physical planning, regional economic development, and strategies to combat poverty and inequality" in both eras (Vitiello & Brinkley, 2014, p. 92). However, increased mechanization and more affordable technologies (e.g., refrigeration) in the twentieth century, resulted in a growing disconnect between societies and the food on which they depend (Mendes et al., 2011; Pothukuchi & Kaufman, 1999) and a rapidly modernizing food industry which quickly outgrew local and regional planning jurisdiction (Vitiello & Brinkley, 2014).

By the mid 1900s food systems were almost entirely absent from municipal planning; however, it was not long before conversations around the conservation and preservation of farmland arose as the result of growing concerns related to urban sprawl, soil degradation, and erosion (Bunce, 1998; Caldwell et al., 2017; Krueger, 1963; Davidson, 1982). In Ontario, the Food Land Guidelines were published in 1978 to assist with agricultural planning including the protection of agricultural land from urban expansion and a process for re-designating agricultural lands for other uses (Government of Ontario, 1978). The following decades brought to light a myriad of planning concerns relevant to agri-food systems, including farm viability, fragmentation of

agricultural land, environmental sustainability, and food security, among others. In Ontario, the approach outlined in the 1978 Food Land Guidelines remained largely the same until the mid 2000s when the agricultural systems approach was first introduced (Turvey, 2020). This change in Ontario's land use policy reflects a larger shift to food systems planning in the planning profession. The transition to food systems planning at the turn of the century brought a more systems-based, holistic perspective of how food intersects with planning activities. This includes, but is not limited to, input suppliers, producers, food processors, distributors, and retailers, but also food access, urban agriculture, health concerns, and power imbalances within existing food systems.

As a profession, planning is difficult to define due to its broad topic area and relationship with adjacent fields of study and practice, including ecology, sociology, and geography, among others (Alexander, 1992). Food systems planning is equally complex and addresses not only matters of land use but also economic, social, and environmental wellbeing. For example, a publication from the American Planning Association (2007) cites a variety of reasons for increased interest in food systems planning including the amount of land required to support food systems, concern about the rate of farmland loss, growing health concerns (including hunger and obesity), awareness that access to food is not equitable, the role of agri-food systems in local and regional economies, increased awareness about environmental impacts (including the amount of fossil fuels required, as well as impacts on hydrological systems), and recognition of the important role food systems play in community building. Just as agri-food systems are multidimensional and multifunctional, so is agri-food systems planning (Hansen et al., 2020; Raja et al., 2018; Robert & Mullinix, 2022).

2.3.2 Agri-food systems planning roles and tools for municipal planners

In 2021, the Kwantlen Polytechnic University Institute for Sustainable Food Systems in partnership with the Canadian Institute of Planners (CIP) prepared a report titled *Planning for Sustainable Food Systems - Findings from a Survey of Canadian Planners and Practitioners*. Their report looked to understand the role of planners in addressing food systems issues through a survey of 435 respondents from across Canada (Hansen et al., 2021). The largest group of survey respondents was planners working in local government, half of whom indicated they

were involved in agri-food systems planning to some extent (Hansen et al., 2021). This same study found rural land use planning, urban agriculture and community gardens, agricultural planning, food access and food security, capacity/relationship building, rural/agricultural economic development, food policy development, and food policy advocacy, were among the top areas of focus for planners work in food systems planning (Hansen et al., 2021, p. 19). Similarly, Soma and Wakefield (2011) interviewed food systems planners from Canada and the USA to develop an applied understanding of what agri-food systems planning entails. Their participants suggested that a “food system planner needs to not only be a technical expert, but also, given the appropriate context, a teacher, advocate, liaison, capacity-builder, and facilitator” (Soma & Wakefield, 2011, p. 60). The areas of focus identified by both Soma & Wakefield (2011) and Hansen et al. (2021) are inclusive of a broad array of planning functions - beyond what may traditionally be conceptualized as part of the domain of community and land use planning (Lang, 2014).

While there are numerous publications on specific aspects of agri-food systems planning, literature addressing the functions, roles, and tools of local governments in carrying out agri-food systems planning is more limited (Buchan et al., 2015; Soma & Wakefield, 2011). Two key publications provide discussion on this topic:

1. *A Planners Guide to Community and Regional Food Planning: Transforming Food Environments, Facilitating Healthy Eating* written by Samina Raja, Branden Born, and Jessica Kozlowski Russell published in 2008.
2. *Local Food System Planning: The Problem, Conceptual Issues, and Policy Tools for Local Government Planners* written by Robert Buchan, Denise Cloutier, Avi Friedman and Aleck Ostry in 2015.

Zink et al. (2022) build on these two publications and identify ten roles of municipal planners, including:“(1) Regulation and policy reform; (2) Coordination and facilitation - General; (3) Coordination and facilitation - Community and food systems stakeholders; (4) Creating space, empowering, and listening; (5) Projects and programming; (6) Leadership and politics; (7) Information generation and dissemination; (8) Monitoring and evaluation; (9) Challenge

planning culture/tradition; (10) Plan making and design” (p. 3). These roles can broadly be understood as belonging to one of three categories: 1) regulatory, 2) non-regulatory, and 3) communication/facilitation.

2.3.2.1 Regulatory roles and tools (Modified from Zink et al., 2022)

Regulation and policy reform is widely recognized in the literature as a key role for planning in supporting agri-food systems (Bennett, 2003; Caldwell et al., 2021; Desjardins et al., 2011; Hayhurst et al., 2013; Huang & Drescher, 2015; Macdonald et al., 2021; Music et al., 2021; Wegener et al., 2013). Lang (2014) suggests:

The role of planning in food system resiliency is one of enabling and supporting. Planners themselves may not be the professionals who will actually implement components of food system resiliency, but they can ensure that there are few barriers for those who come forward with projects. (p. 54)

Municipal planning departments play an important role in amending existing land use policy, as well as the creation of new plans and policies that support agri-food systems. Codifying support for agri-food systems in local and regional regulatory texts signals a long-term commitment to supporting local and regional agri-food systems, in addition to increasing transparency and consistency of municipal decision making. Building on the list provided by Zink et al. (2022), policy reform should:

- integrate food systems supportive and prescriptive language;
- reduce barriers to non-conventional forms of food production and retail;
- encourage multifunctional agricultural practices;
- consider the benefit of distinguishing food retail (specifically grocery stores) from other commercial uses;
- recognize diversity in agriculture and provide flexibility for farm parcel-size;
- minimize the creation of new lots in agriculture areas;
- consider mixed-use zoning as a way to encourage food retail;

- promote the use of vacant lands for urban agriculture;
- include community gardens as part of green space planning;
- pre-zone areas to encourage high density development;
- encourage agriculture-related infrastructure including cold storage, distribution, processing, and packaging infrastructure; and
- accommodate on-farm diversification and on-farm value-added uses (Akimowicz et al., 2022; Bennett, 2003; Buchan et al., 2019; Caldwell et al., 2022; Desjardins et al., 2011; Duesling, 2021; Hayhurst et al., 2013; Huang & Drescher, 2015; Lang, 2014; Music et al., 2021; Port & Moos, 2014; Soma & Wakefield, 2011; Wegener et al., 2013; Zink et al., 2022).

This list is not exhaustive, nor is it implied that each item is applicable in every context.

Consultation with local agri-food systems stakeholders to better understand context-specific challenges and opportunities is key to implementing supportive agri-food system policies and plans (Akimowicz et al., 2022; Deloitte, 2013; Desjardins et al., 2011; Van Osch, 1997). In their study of Canadian planners working in food systems planning, Hansen et al. (2021) found that many planners lacked knowledge about how policy and regulatory tools could be “leveraged to address key issues such as food security, farmland protection, and infrastructure development” (p. 24). Furthermore, planners reported that they were unsure how to integrate agri-food systems planning into other areas of planning (e.g., infrastructure development) (Hansen et al., 2021).

2.3.2.2 Non-regulatory roles and tools (Modified from Zink et al., 2022)

Beyond regulation there are a number of initiatives that planners can support related to agri-food systems planning. Non-regulatory tools are an important way planners can move beyond what is traditionally conceptualized as part of community and land use planning (Hansen et al., 2021; Lang, 2014; Soma & Wakefield, 2011). Non-regulatory projects and programs discussed in the literature include: community gardens, buy local strategies, food and farm tours, edible landscapes, farmers markets, funding initiatives, rent subsidies [for land or facilities], environmental and water quality programs, food hubs, food/agricultural festivals,

demonstration gardens/farms, food asset mapping, and community food assessments, among others (Buchan et al., 2015, 2019; Caldwell et al., 2020, 2021; Music et al., 2021; Raja et al., 2008; Trudeau et al., 2021).

Furthermore, planners can play a role in educating councils and the public on broader agri-food systems issues (Buchan et al., 2019). Specific examples identified in the literature include the role of planners in providing public education and awareness (Huang & Drescher, 2015), informing the public/council/staff about the value of food policy (Buchan et al., 2019), helping civil society understand planning documents (Macdonald et al., 2021), and the creation of land inventories (Huang & Drescher, 2015; Thibert, 2012). The literature also speaks to the value of monitoring and evaluation as part of effective agri-food systems planning (Deloitte, 2013). For example, Desjardins et al. (2011) discuss “the importance of monitoring the social, economic, agricultural, and developmental outcomes and challenges that result from implementing food policies” and the importance of establishing baseline metrics (p. 9).

Another way municipal planning departments can support agri-food systems is through providing staff resources to support key initiatives external to the planning department (e.g., having a staff member sit on the municipal agri-food advisory committee). Providing resources to agri-food stakeholders “utilizes the capacity, skills and knowledge of non-local government people to undertake work in a limited partnership with the local government by providing resources which can be in the form of funds, land, staff support or facilities” (Buchan, 2015, p. 13).

2.3.2.3 Facilitation and coordination roles and tools (Modified from Zink et al., 2022)

Planners also play an important role in facilitation and coordination between the multitude of stakeholders involved in agri-food systems planning. Agri-food systems span multiple, overlapping jurisdictions and facilitation and coordination play an important role in promoting urban to rural linkages (Hayhurst et al., 2013; Lyson, 2004; Sharp & Clark, 2008), providing financial incentives (Macdonald et al., 2021; Waldick et al., 2017), pooling resources (Clark et al., 2017; Trudeau et al., 2021), coordinating program delivery (Waldick et al., 2017), implementing regional plans and policies (Wegener, Raine, et al., 2012), facilitating a reflexive

agri-food planning process (Clark et al., 2017), and connecting the dots between different areas of agri-food systems (Hansen et al., 2021; Lang, 2014; Soma & Wakefield, 2011; Trudeau et al., 2021). Lang (2014) argues that planners are ideally situated to coordinate agri-food systems planning at the municipal level because the planning profession already overlaps with, and is connected to, several agri-food systems aspects (including economic development, natural heritage, public health, environmental sustainability, climate change, and tourism, among others). Furthermore, planners possess soft skills related to facilitation and coordination such as communication, stakeholder management, leadership, problem solving, and conflict resolution (Hansen, 2021).

Looking at specific aspects of coordination and facilitation, Caldwell et al. (2021) and Macdonald et al. (2021) speak to the role of intergovernmental collaboration and territorial coordination, including partnership with neighboring municipalities, coordination between upper- and lower-tier municipal governments, and relationship building with conservation authorities. Interdepartmental coordination also has an important role to play in food systems planning. Specifically, partnerships with public health (Blay-Palmer, 2009; Desjardins et al., 2011; Hodgson, 2009; Lang, 2014; Mui et al., 2018; Music et al., 2021; Wegener et al., 2013; Wegener, Hanning, et al., 2012; Wegener, Raine, et al., 2012), economic and community development (Caldwell et al., 2021; Music et al., 2021; Soma & Wakefield, 2011), and climate change/disaster management (Lang, 2014) are recognized as strengthening agri-food systems planning activities. Facilitation and coordination in this context is important for building shared vocabulary and vision (Hansen et al., 2021; Music et al., 2021; Wegener, Raine, et al., 2012). These partnerships can also be used to strategically position food systems planning as part of the municipal agenda, gain support from council, coordinate policy development, and access existing partnerships with community stakeholders (Buchan et al., 2019; Waldick et al., 2017; Wegener, Hanning, et al., 2012; Wegener, Raine, et al., 2012; Wegener et al., 2013).

Wekerle (2004) speaks specifically to partnerships that link food systems planning to civil society (e.g., committees, task forces, and coalitions). Similarly, Caldwell (1998) and Waldick et al. (2017) emphasize the need for broad sectoral consultation and multi-participant planning and decision-making approaches. This type of network involvement and multi-participant planning

is important for linking municipal staff as well as councils to a diversity of stakeholders, including food agencies, social justice groups, and community garden advocates (Wekerle, 2004), as well as, food policy councils (Blay-Palmer, 2009; Deloitte, 2013; Lang, 2014; Trudeau et al., 2021), farm community groups (Van Osch, 1997; Macdonald et al., 2021), agricultural advisory committees (Caldwell et al., 2020; Epp, 2019), and private organizations (Donald, 2008; Macdonald et al., 2021).

2.3.3 Why agri-food systems planning

Two decades after being introduced to the planning portfolio, food systems planning continues to be an important topic for the planning profession (Hansen et al., 2020; Raja et al., 2017). Clark et al. (2017) explain that “Problems in food systems are typically addressed through a narrow disciplinary/sectoral lens. For instance, a discipline may focus on the production of food (agriculture) or the consumption (nutrition) or the allocation of land on which food is grown (land-use planning). ... Such narrow perspectives often fail to recognize externalities” (p. 316). Agri-food systems planning strives to provide a more holistic and systems-based perspective which recognizes the complex, interconnected nature of agri-food systems stakeholders and processes, beyond traditional rural-urban divides (Hansen et al., 2020, 2021; Lang, 2014; Wegener et al., 2013).

However, work related to agri-food systems planning is in early stages and a number of gaps and areas for improvement have been identified (Hansen et al., 2021). For example, Sonnino et al. (2019) identify that the middle stages of food systems (processing, transportation, storage, etc.) receive less attention than food production and consumption both in theory and in practice. Similarly, Trudeau et al. (2021) provide recommendations for municipal food systems planning in Calgary including the need to “recognize food infrastructure as core infrastructure” (p. 29). Trudeau et al. (2021) also suggest that greater emphasis is needed for “inclusive governance practices” and “critical equity approaches” in food systems planning (p. 29). This call for more socially responsible agri-food systems planning is echoed by scholars who argue that agri-food systems planning has a long way to go in addressing structural inequities and legacies of imperialism and colonization (Blay-Palmer, 2009; Clark et al., 2017; Hansen et al., 2021; Raja et al., 2017, 2018; Wekerle, 2004). Furthermore, some scholars are calling for more critical

discussions about the role of municipal planning in agri-food systems governance (Dring et al., 2023; Hansen et al., 2021; Lang, 2014). For example, Dring et al. (2023) suggest that:

Multiple limits to governing agricultural systems include the promotion and implementation of simple solutions to complex problems, limited ability to engage with the diversity of the agricultural sector and their different needs, and governance mismatches with the boundaries of agriculture (i.e., farm parcels, Agricultural Land Reserve area) and the administrative scale of the municipality. (p. 1)

Agri-food systems are complex systems that transcend sectoral, jurisdictional, and disciplinary boundaries; however, municipalities have a key role to play in agri-food systems planning, particularly as it relates to local and regional agri-food systems (Buchan et al., 2019; Hansen et al., 2020; Kaufman, 2009; Pothukuchi & Kaufman, 2000; Trudeau et al., 2021). Hansen et al. (2020) argue that “As food systems planning has emerged as a legitimate field of practice over the past two decades, so has the opportunity to plan for a food system that works toward community, economic and environmental health and wellbeing” (p.1).

2.4 Capacity as a conceptual tool

The purpose of Section 2.4 is to address the question “How can capacity, as a conceptual tool, inform our understanding of agri-food systems planning?” This section discusses various ways capacity is conceptualized and operationalized in academic literature and includes bodies of literature that overlap with or are adjacent to planning (e.g., organizational capacity, local government capacity, and policy capacity). Furthermore, this section relies on *Conceptualizing and Operationalizing Planning Capacity* by Carolyn Loh (2015) which offers a comprehensive review of how planning capacity is discussed in the literature.

2.4.1 Why capacity?

There is a growing body of literature that recognizes the role of planning capacity in contributing to environmental planning objectives, including growth management and residential intensification (Brody et al., 2006; Filion et al., 2004; Filion et al., 2020; Göçmen & LaGro, 2016; Hawkins, 2014; Lee, 2018), stormwater management (Brody et al., 2010; Kim & Li, 2016), coastal land use planning (Norton et al., 2018; Tang, 2008), climate change policies (Tang

et al., 2009), and agriculture and agri-food priorities and issues (Caldwell et al., 2020, 2021; Caldwell & Procter, 2013; Davidson, 1988). These articles largely recognize that:

When viewed from an institutional perspective, professional planners can be at the centre of personal and inter-organisational networks and interactions, and because planners in part create the rules that structure government involvement in these relations, they can have a significant influence on the outcomes of planning processes. (Hawkins, 2014, p. 1686)

This sentiment is corroborated by Göçmen & LaGro (2016) who argue that “planning capacity at the local government, where the review and approval of most land planning activity takes place, is critical for advancing community and regional sustainability” (p. 1513 –1514). Furthermore, this body of literature argues that planning staff capacity is associated with more progressive policies and plans, more effective stakeholder management (including conflict resolution), and higher rates of plan implementation (Hawkins, 2014; Lee, 2018; Loh, 2015). Berke et al. (2006) adds that planning staff capacity “has a potentially important influence on whether issues raised by plans are acted upon” and that “increased capacity means more attention is given to the explanation of plan policies and associated rules, to the provision of information to applicants, to the conveyance of policy advice, and to the coordination with other public agencies charged with permit review” (p. 586-587). In the context of growth management, Fillion et al. (2020) associates increased capacity with residential intensification and the ability to control negative externalities associated with development (e.g., infrastructure and service overload). In the context of stormwater management, Kim and Li (2016) focus on planning staff (capacity) because of their central role in flood damage mitigation. Related to land use planning for coastal areas, multiple studies have found that planning capacity is a key factor contributing to plan quality and effectiveness (Heim LaFrombois et al., 2022; Tang, 2008). Norton et al. (2018) add an interesting observation that “Focus on coastal management is inversely associated, however, with the use of planning consultants” (p. 183).

Inherent to the study of capacity, is the idea that capacity is inconsistent and varied. Göçmen & LaGro (2016) found that larger, more affluent, and better educated counties with a metropolitan status were more likely to have higher staff capacity. This naturally means that smaller, less

affluent, and less educated counties had less staff capacity. A similar finding arose from Lee's (2018) doctoral research which suggests that planning capacity (the number of staff resources) was a barrier for townships implementation of the Growth Plan in Waterloo Region. Lee's research also reports that in Simcoe County, limited staff capacity has led to "a reactive, developer-led planning process regarding where and how development should occur" (Lee, 2018, p. 157). Caldwell et al. (2021) report that limited capacity impacts the ability of municipalities to respond to emerging agricultural priorities (p. 258). Frank and Hibbard (2017) report similar challenges with planning capacity in rural areas and provide a quote from one of their research participants:

Unfortunately, rural planners, municipalities, and agencies in Canada are not going beyond the minimum requirements of the planning law, even though legislators intended the law to be a starting point. There is not much time to engage beyond land use regulation. (p. 303)

It is interesting to note that literature looking at the intersection between planning capacity and specific planning goals is limited. For example, Tang et al. (2009) suggest that they are the first to look at the relationship between local planning capacity and climate change mitigation and adaptation. Looking to other bodies of literature, capacity is thought to enable organizations and governments to be proactive instead of reactive (Honadle, 1981; Loh, 2015). Addison (2009) adds that "low administrative capacity has implications for the impact of policy, the quality of multi-level governance, the fulfillment of international obligations and the accountability of the political system" (p. 6).

2.4.2 Conceptualizations of capacity

Now that the significance of planning capacity has been established, it is important to discuss how capacity is conceptualized in the literature. In practical terms the conceptualization of capacity means "devising a working definition for the purposes of the research" (Loh, 2015, p.135). Throughout the literature, capacity is conceptualized as both an 'ends' and a 'means' (Christensen & Gazley, 2008; Honadle, 1981; Loh, 2015). For example, in a paper addressing capacity building and institutional development, Franks (1999) defines capacity as "the overall

ability of the individual or group to actually perform the responsibilities” (p. 52). Similarly, Brinkerhoff and Morgan (2010) define capacity as “being able to achieve a desired collective purpose” (p. 3). Both definitions conceptualize capacity as the ability to achieve a desired outcome. In contrast, Loh (2015), in their paper about planning capacity, explains that “Capacity refers to the amount of professional and budgetary resources that are available to an entity to carry out a process, and the degree of sophistication with which the process is carried out” (p. 134). Similarly, Sokolow (1981) defines capacity in the context of local government as “the resources and expertise necessary to cope with increasingly complex problems” (p. 704). Here capacity is conceptualized as the resources necessary to carry out a process.

In addition to being conceptualized as an ‘ends’ and a ‘means’, capacity is generally thought to exist at three levels. Franks (1999) argues that capacity “depends not only on the capabilities of the people but also on the overall size of the tasks, the resources which are needed to perform them, and the framework within which they are discharged” (p. 52). A similar sentiment is present in the 1998 United Nations Development Programme report which discusses three levels of capacity: the individual, the entity (or organization), and the system (or institution) (UNDP, 1998). This conceptualization of capacity is the most common. That being said, some authors refer to micro, meso (mezzo), and macro levels of capacity which closely mirror the system, organization, and individual levels (Isaza et al., 2015; Saguin et al., 2018). These levels are a useful heuristic tool, but in reality, the division between levels is not so clear. For example, Isaza et al., (2015) suggest that research relating to meso (mezzo) level capacity relates to both the organization and the individual, “focusing on the role of individuals in organizations” (p. 8). Morgan (2005) suggests that systems thinking provides an alternative to the traditional hierarchical view of capacity. More specifically, Morgan (2005) argues that:

In practice, most systems draw information, resources and energy from a whole range of places and span many boundaries and levels. The question is less about the identification of the hierarchical level and more about the nature, distribution and interconnection of the system actors. (p. 16)

Adopting a more systems-oriented approach captures the role of external actors, networks, and relationships involved in carrying out a task (e.g., agri-food systems planning). Systems thinking

is an analytical framework or approach that examines interrelated elements and actors, and the relationships between them, to understand how they carry out a specific purpose or function (Meadows, 2009; Posthumus et al., 2018). Posthumus et al. (2018) adds that “system approaches are considered necessary to deal with problems that are complex, uncertain and/or wicked, requiring different forms of knowledge to identify solutions that can trigger systemic change” (p. 12). In this context, setting system boundaries is an important exercise in managing scope. Boundaries are an important part of systems thinking as without them systems have no limits (Meadows, 2009). Posthumus et al. (2018) suggests that the system’s purpose or function helps to define the system's boundary.

2.4.3 What is planning capacity

Planning is a key function of municipal governments and can be understood in the context of public administration (Loh, 2015). This is supported by Brody et al. (2010) who suggest that organizational capacity provides a complete conceptualization of local planning capacity. Brody et al. (2010) conceptualize **organizational capacity** in the context of flood mitigation “as the ability to anticipate flooding, make informed decisions about mitigation, and implement effective policies” and identify that “key characteristics of organizational capacity include financial resources, staffing, technical expertise, communication and information sharing, leadership, and a commitment to flood protection” (p. 171). This conceptualization of capacity includes consideration for inputs (budget, technical expertise) as well as outcomes (the ability to achieve a common goal - in this case, flood mitigation).

In the context of **local government**, Gargan (1981) posits that capacity is the ability of the government to “do what it wants to do” (p. 652). Gargan (1981) goes on to say that “local government capacity is a function of expectations, resources, and problems” (p. 653). This definition is broad and can be applied to any number of local government functions including planning. Gargan’s conceptualization of capacity also speaks to the dynamic and process-oriented nature of capacity (Grindle & Hilderbrand, 1995; Isaza et al., 2015).

Specific to local planning, Loh (2012) defines **planning capacity** as “the amount of professional and budgetary resources available to a government to carry out the planning process” (p. 38). A

similar resource/input focused definition is provided by Brody et al. (2006) who view planning capacity as “the number of planners that contribute to the development of the comprehensive plan” (p. 298). Loh (2015) provides a summary of how planning capacity is conceptualized in the literature, and identifies tangible and intangible resources, as well as desired outcomes (Figure 2.1).

Figure 2.1 - Loh’s summary table of “Conceptualizations of Capacity” (2015, p. 137)

Conceptualization of Capacity	Author/Year
Resources (inputs)	
Tangible inputs	
Financial	Cohen, Raudenbush, and Ball (2000) and Loh (2012)
Expertise	Sokolow (1981), Brody (2003), and Brody, Carrasco, and Highfield (2006)
Staff	Dalton and Burby (1994) and Loh (2012)
Intangible inputs	
Connections/political capacity	Glickman and Servon (2003) and Gittell and Vidal (1998)
Social capital	Goldfinger and Ferguson (2009), Dent (2008), and Loh (2012)
Capability (outcomes/outputs)	
To do what [the government] wants to do	Gargan (1981)
To plan	Honadle (1981) and Greasley, John, and Wolman (2011)
To capture and manage resources	Honadle (1981) and Seroka (1988)
To provide services	Deller, Nelson, and Walzer (1992) and Visser (2004)
To provide leadership	Visser (2004)
To implement a mandate	May (1993)

Since the publication of Loh’s review of planning capacity in 2015, several papers have been published which speak to the conceptualization of planning capacity in specific contexts. Kim and Li (2016) look at the role of planning capacity in sustainable stormwater management and explain that in this context “planning capacity refers to features that can be controlled by local governments, such as the planning resource and process as well as the institutional capacity” (p. 4). Heim LaFrombois et al.’s (2022) study conceptualizes capacity in the context of green infrastructure planning and groups inter/intra organizational coordination and capacity together. Here organizational planning capacity is seen to be a function of “leadership and collaboration, planning responsibility and oversight, and resources” (Heim LaFrombois et al., 2022, p. 11). This conceptualization of capacity is unique in that it recognizes the importance of multiple types of collaboration - “with other organizations and departments within a given

municipality, with higher level organizations that may set guidelines or provide funding, and with neighboring municipalities that share ecological features” (Heim LaFrombois et al., 2022, p. 9).

In 2016, Göçmen and LaGro looked at planning capacity to support environmentally sustainable residential development and conceptualized planning capacity as the presence and characteristics of the planning department, in addition to the planning director/manager’s perceptions of sustainability, and the presence of local policies that were supportive of sustainable growth (Göçmen & LaGro, 2016). Furthermore, this conceptualization of capacity considers the number of permits approved for sustainable growth (e.g., conservation subdivisions, transit-oriented developments). This approach considers both the resources required as well as the desired outcomes of the planning activities being studied.

Another type of capacity relevant to agri-food systems planning is policy capacity. In the context of government, **policy capacity** refers to the ability of the government to create, enact, review, and enforce “good” policies (Anderson, 1996; Lawrence et al., 2020; Painter & Pierre, 2005). Lawrence et al. (2020) cites Gleeson et al. (2009) and Peters (1996) and argues that “policy capacity is the ability to make proactive, cross-cutting, and strategic choices required to successfully deviate from business-as-usual, while a lack of capacity leads to reactive and myopic decisions” (p. 17). This conceptualization of policy capacity aligns with the belief that capacity should contribute to social change (Isaza et al., 2015), and requires capacities related to “negotiation, communication, and a knowledge of the policy process” (Lawrence, 2020, p. 8).

2.4.4 Operationalizing capacity

Moving from conceptualization to operationalization requires a more concrete understanding of the components that contribute to capacity; this is complicated as capacity is recognized as both an outcome and a process. Furthermore, capacity is composed of both quantitative and qualitative factors. Christensen and Gazley (2008) explain that “capacity is also given tangible and intangible, or quantitative and qualitative dimensions, so as to include not only the number of staff but their specialised skills, and the strength or quality of organisational leadership” (p. 266).

Addison (2009) identifies three ways capacity is operationalized in political science literature, first as a latent concept or intrinsic trait, second as a set of manifest components and structures, and third as common knowledge (e.g., the dictionary definition of capacity). In the first scenario, where capacity is operationalized as a latent trait, researchers are “intuiting the existence of a phenomenon that, though unseen, explains outcomes better than observable objects, agents or processes” (Addison, 2009, p. 1). In the second scenario, where capacity is a set of manifest components and structures, capacity can be observed or measured using either formative or reflective measures (Addison, 2009). Using the formative approach, resources (inputs) are conceptualized to precede and determine capacity. In the reflective approach to capacity, outcomes or performance factors are used to infer levels of capacity. The third scenario relies on the assumption that there is a shared understanding of capacity and often implies that capacity is an intrinsic trait (Addison, 2009).

Looking specifically at planning capacity, Loh’s (2015) review identifies several ways planning capacity is operationalized in the literature, including:

- planning budget (or planning budget per capita),
- number of planning department staff (or planning staff per capita),
- number of years of planning experience planning staff had,
- staff membership to professional organizations,
- number of years since major planning documents were updated,
- number of standing committees,
- number of enforcement officers,
- intergovernmental collaboration between upper- and lower-tier governments,
- staff ratings of staffing adequacy, expertise adequacy, and access to council members,
- number of applications processed in a given time period, and
- the frequency of staff meetings.

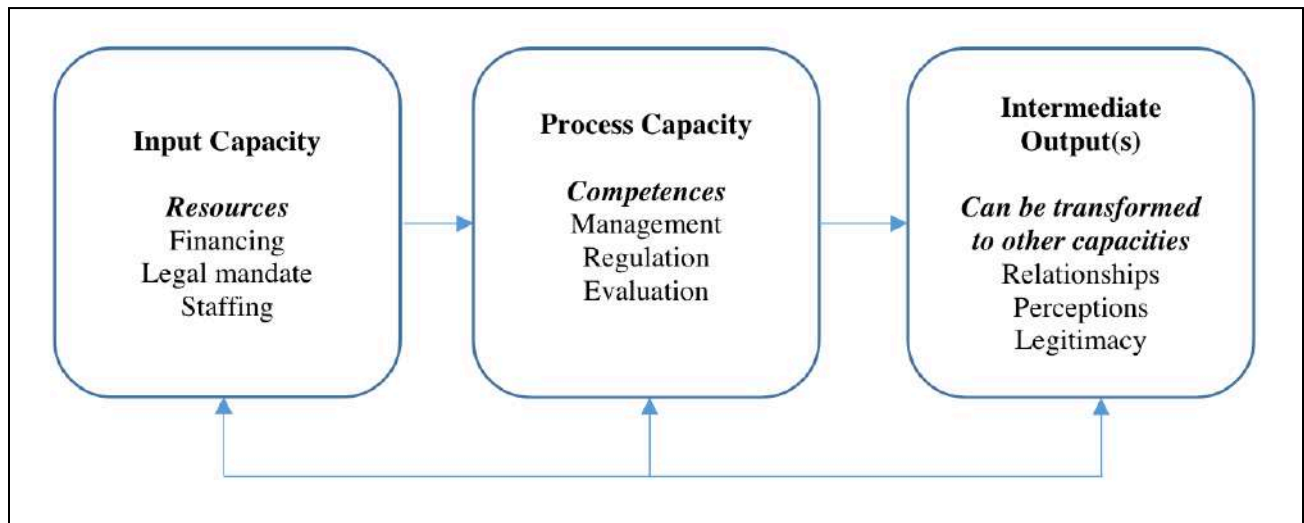
These components can be considered on their own, or in unique combinations depending on the planning process being studied. The most frequently relied upon components of capacity are staff numbers (or the existence of a planning department) and planning department budget (Loh, 2015). However, examples of more qualitative considerations can also be found in the literature. For example, Heim LaFrombois et al. (2022) look at “leadership and collaboration, planning responsibility and oversight, and resources” as key components of organizational planning capacity. As a result, their research methods rely on surveys and interviews to collect this qualitative data. There are also several studies of planning capacity that use statistical models to first operationalize and then evaluate planning capacity (Brody et al., 2006; Göçmen & LaGro, 2016; Hawkins, 2014; Heim LaFrombois et al., 2022; Kim & Li, 2016; Tang, 2008; Tang et al., 2009).

It is interesting to note that collaboration is often not included in operationalizations of capacity. As discussed previously, systems thinking in relation to capacity encourages scholars to consider factors both within and external to the organization (networks, political will, etc.), however it is not uncommon for studies of capacity to limit themselves to the organization itself (staff resources, budget, etc.) (Brinkerhoff, 2005; Christensen & Gazley, 2008).

2.4.5 Conceptual frameworks

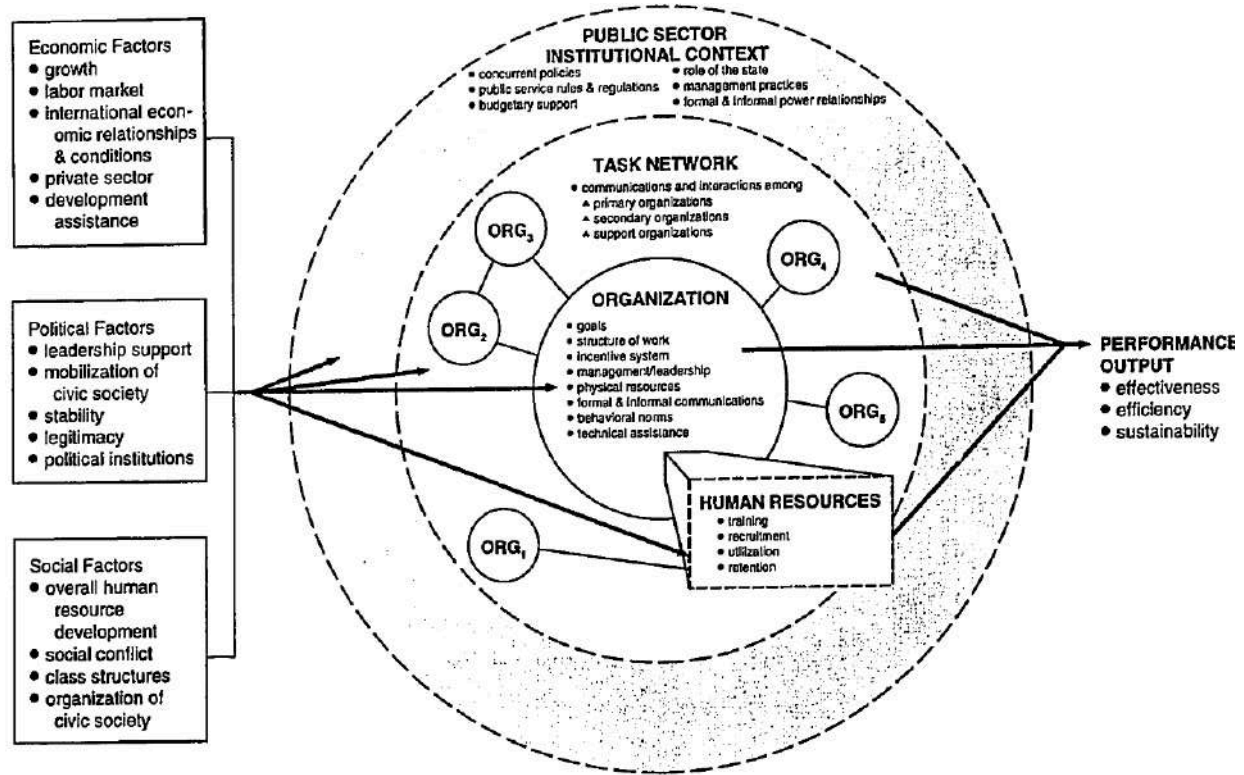
The literature also provides a variety of conceptual frameworks of capacity. Three conceptual frameworks have been included as part of this chapter due to their relevance to the research. Saguin et al. (2018) propose a broad framework that can be applied to most types of government/policy capacity (Figure 2.2). In their conceptual framework Saguin et al. suggest that the latent aspect of policy capacity can be understood as process capacity, which is defined as “the skills and competencies of policy actors to use the endowments and resources” (p. 13). Here capacity is operationalized as an “iterative process of generating resources, developing skills and transforming outputs to pave way for further public action” (p. 13). The arrows between input capacity, process capacity, and intermediate outputs are particularly interesting as they illustrate feedback loops between the three.

Figure 2.2 - Saguin et al.'s policy capacity framework (2018, p. 11)



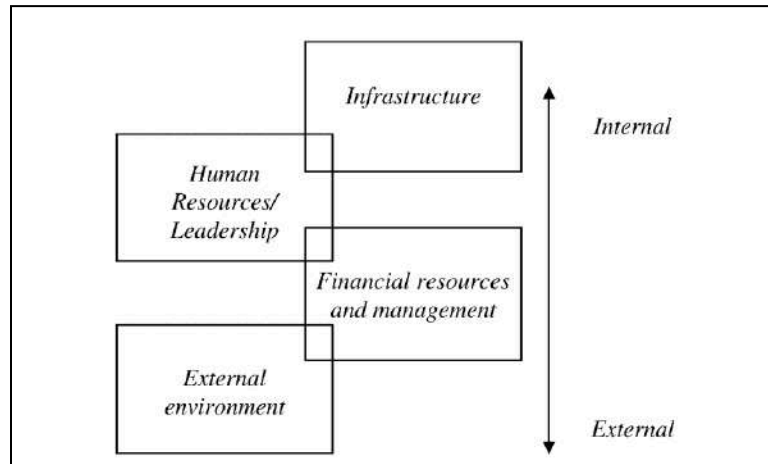
The second framework is provided by Grindle and Hilderbrand (1995) who identify five dimensions of sustainable capacity in the public sector. These dimensions include: the action environment, the institutional context of the public sector, the task network, organizations, and human resources (Grindle & Hilderbrand, 1995). The dimensions identified in Grindle and Hilderbrand's framework are intended to be used as levels of analysis (Figure 2.3). The social, political, and economic factors on the left side of the diagram are difficult and slow to change and compose what Grindle and Hilderbrand (1995) have termed the "Action Environment" (p. 5). What is interesting to note in this framework is that all three levels of capacity are considered (system, organization, and individual) as well as tangible and intangible aspects of capacity. Furthermore, this framework recognizes the important role of collaboration both within and external to the organization.

Figure 2.3 - Grindle and Hilderbrand's dimensions of sustainable capacity in the public sector (1995, p. 6)



Christensen and Gazley (2008) provide the third and final framework considered as part of this chapter (Figure 2.4). Here, organizational capacity is operationalized as a function of (1) organisational infrastructure, (2) human resources, (3) financial resources and management systems and (4) political and market characteristics of the external environment. Christensen and Gazley (2008) argue that their “relatively simple conceptual framework of capacity focusing on internal and external dimensions, comfortably captures capacity’s various uses across research fields” (p. 273).

Figure 2.4 - Christensen and Gazley's material and spatial dimensions of organizational capacity (2008, p. 268)



2.5 Connecting agri-food systems planning and capacity

This section builds on Sections 2.3 and 2.4 and proposes a conceptual framework for municipal agri-food systems planning capacity (Appendix H includes the initial systems map created in 2021 to inform this work). A conceptual framework is a “tentative theory” which explains a complex idea or process, including the elements involved and the relationships between them (Maxwell, 2005, p. 39). The conceptual framework proposed in this chapter was modified through the data collection and analysis phases of this research (as discussed in Chapter 3 - Research Methodology). A modified conceptual framework can be found in Chapter 7.

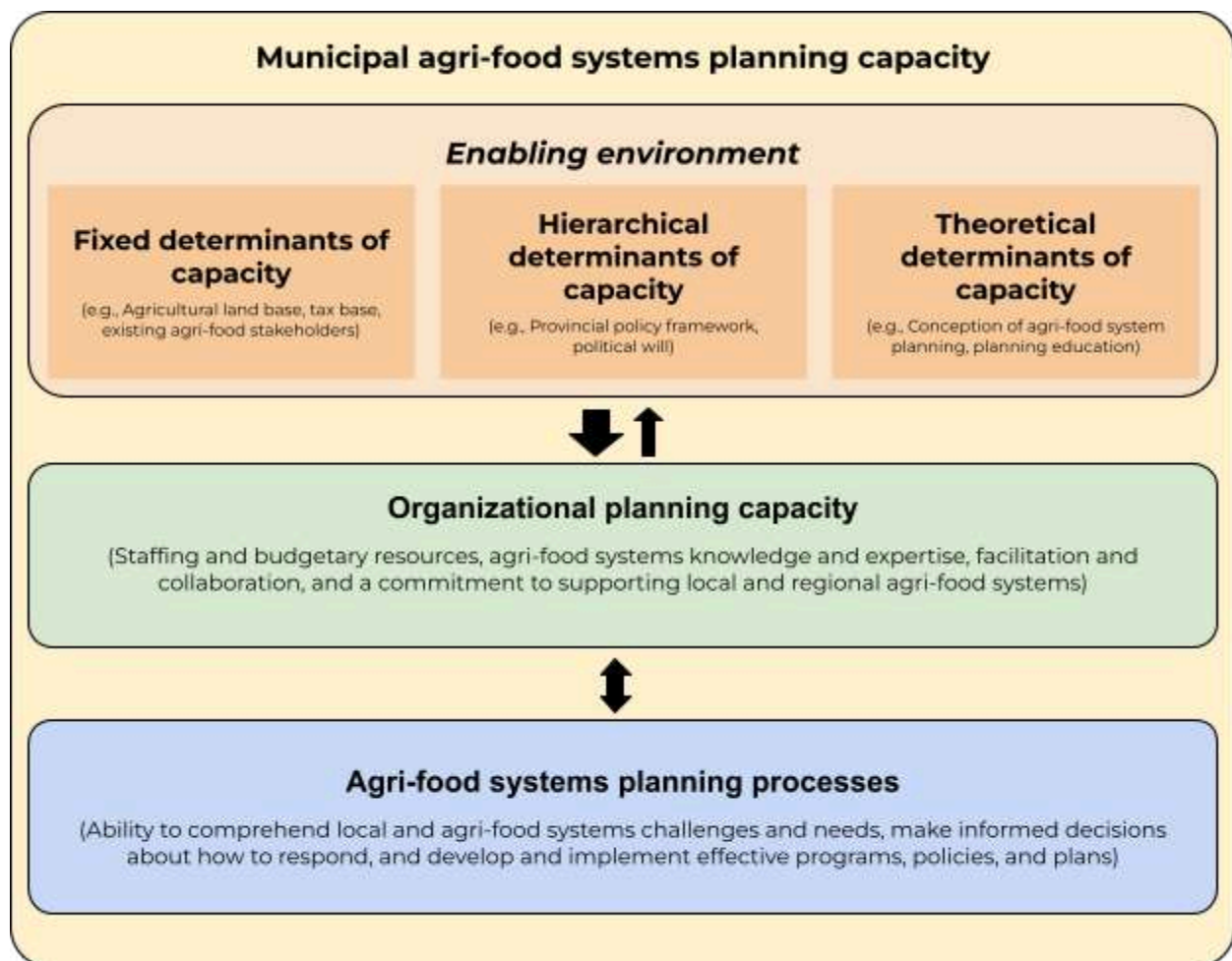
2.5.1 Conceptualizing agri-food systems planning capacity

While there is well established interest in agri-food systems planning, it is less clear what capacity is needed to undertake this work (Caldwell et al., 2020, 2021; Soma & Wakefield, 2011; Zink et al., 2022). Research by Caldwell et al. (2021) defines municipal capacity as “the ability to use internal and external resources, available either formally or informally, at both government and greater community levels, to respond to emerging agricultural and agri-food issues effectively” (p. 248). This definition, along with the entirety of this chapter, provide the foundation for the proposed conceptual framework for municipal agri-food systems planning capacity (Figure 2.5).

Proposed conceptual framework for municipal agri-food systems planning capacity

Municipal agri-food systems planning capacity is the ability to comprehend local and regional agri-food systems challenges and needs, make informed decisions about how to respond, and develop and implement supportive programs, policies, and plans (Brody et al., 2010; Honadle, 1981). Key characteristics of agri-food systems planning capacity include staffing and budgetary resources, agri-food systems knowledge and expertise, facilitation and collaboration, and a commitment to supporting sustainable local and regional agri-food systems.

Figure 2.5 - Proposed conceptual framework for municipal agri-food systems planning capacity (adapted from Zink, 2022)



The proposed conceptual framework of municipal agri-food systems planning capacity (Figure 2.5) includes three components: the enabling environment, organizational planning capacity, and agri-food systems planning processes. These three components include aspects of all three levels of capacity (macro/institution, meso/organization, and micro/individual). As Morgan (2005) suggested these levels are interrelated and agri-food systems planning capacity is conceptualized across multiple levels and draws on relationships with both internal and external actors.

The **enabling environment** largely speaks to the institutional framework in which municipal agri-food systems planning takes place, including, provincial policy direction, political will, conceptual ideas around what agri-food systems planning encompasses, and landscape and population characteristics. The enabling environment is composed of institutions that place constraints on agri-food systems planning and are generally difficult and slow to change.

Organizational planning capacity includes all of the components that contribute to a municipality's agri-food systems planning process. This includes the planning department resources and characteristics (staff, budget, departmental structure, knowledge of agri-food systems), as well as relationships with other municipal departments (interdepartmental collaboration), relationships with external actors (intergovernmental collaboration, conservation authorities, agri-food stakeholders), and commitment to local and regional agri-food systems.

Agri-food systems planning processes considers processes and outcomes associated with agri-food systems planning. Agri-food systems planning processes and outcomes include both regulatory and non-regulatory initiatives as well as ongoing partnerships in support of agri-food systems planning. The American Planning Association identifies six objectives associated with food systems planning:

- (1) preserve existing and support new opportunities for local and regional urban and rural agriculture; (2) promote sustainable agriculture and food production practices; (3) support local and regional food value chains and related infrastructure involved in the processing, packaging, and distribution of food; (4) facilitate community food security, or equitable physical and economic access to safe, nutritious, culturally appropriate, and

sustainably grown food at all times across a community, especially among vulnerable populations; (5) support and promote good nutrition and health; and (6) facilitate the reduction of solid food-related waste and develop or manage a reuse, recovery, recycling, and disposal system for food waste and related packaging. (n.d.)

The enabling environment (the elements which provide the context), organizational planning capacity (the elements which contribute to undertaking the work), and agri-food systems planning processes (the ability to carry out agri-food systems planning activities) are connected by feedback loops. These relationships and their associated strengths are depicted using arrows of different sizes. For example, increased organizational planning capacity is hypothesized to lead to agri-food systems planning processes; Agri-food systems planning processes are understood to support local and regional agri-food systems which in turn creates a stronger case for agri-food systems planning at the organizational level. This is different from the relationship between the enabling environment and organizational planning capacity, where the enabling environment is slower and more difficult to change and has a stronger influence over organizational planning capacity (e.g., policy framework, planning department mandate).

2.6 Summary of Chapter 2

Chapter 2 provides a literature review of agri-food systems planning and capacity (as it relates to municipal planning). More specifically, this chapter addresses the relationship between rurality and agri-food systems as discussed by the literature, provides an overview of agri-food systems planning and the roles and tools available to planners, and discusses how capacity as a conceptual tool can inform our understanding of agri-food systems planning. Building on this discussion, a proposed conceptual framework for municipal agri-food systems planning capacity is presented. This chapter provides the groundwork for primary data collection and analysis carried out in Phase 2 and Phase 3 of this research. Chapter 7 includes a modified conceptual framework for municipal agri-food systems planning capacity based on the findings of this research.

Chapter 3: Research Methodology

3.1 Purpose of Chapter 3

The purpose of Chapter 3 is to outline the relevant methodological paradigm, methods of data collection, data analysis, and research limitations. This research focuses on municipal agri-food systems planning capacity across Ontario and looks to address an existing gap in the literature. Furthermore, this research addresses a call from the Ontario Agri-Food Innovation Alliance and has clear implications for agri-food systems planning in Ontario. This research is informed by four research questions:

1. How can municipal agri-food systems planning capacity be conceptualized?
2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?
 - 2.1. What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?
 - 2.2. Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?
 - 2.3. How does municipal agri-food systems planning capacity vary across the province?
3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?
4. What best practices and resources would strengthen municipal agri-food systems planning capacity?

The goal of this research is to improve our understanding of municipal agri-food systems planning capacity in Ontario and to better position municipal planning departments to respond

to and support local and regional agri-food systems. This goal will be achieved through the following five objectives:

1. Develop a conceptual framework for municipal agri-food systems planning capacity in Ontario.
2. Investigate the capacity of municipal planning departments to respond to and support agri-food systems in Ontario.
3. Evaluate the capacity of municipalities to implement Ontario's agri-food systems land use policies (including Minimum Distance Separation (MDS), agricultural impact assessments, agricultural systems approach, and the Farming and Food Production Protection Act).
4. Explore how municipal agri-food systems planning capacity is supporting local and regional agri-food systems actors, interactions, and functions.
5. Identify strategies to strengthen municipal agri-food systems planning capacity in Ontario.

This research is underpinned by a mixed methods methodological paradigm (Creswell & Creswell, 2018; Creswell, 2015; Johnson et al., 2007; Tashakkori & Creswell, 2007) grounded in pragmatism (Cherryholmes, 1992; Johnson & Onwuegbuzie, 2004; Hall, 2013), and employed a convergent mixed-methods research approach (Creswell & Creswell, 2018). Data and methods involved in this research include a literature review, survey questionnaires, semi-structured interviews, and secondary data (including urban-rural classification, MMAH Municipal Service Office regions, and municipal type and boundary data). Data were analyzed using a variety of methods including thematic analysis, data visualization, and statistical analysis.

3.2 Methodological paradigm and research methodology

Identifying and understanding the methodological paradigm which underlies your work is an important part of the research process (Creswell & Creswell, 2018). Reay et al. (2023) suggest

that “explaining your paradigm helps others understand how you see the world, your values, and how this informs what underpins your research” (p. 22). Methodological paradigms are rooted in philosophical thought, have implicit values, are associated with specific epistemological and ontological assumptions, and guide the way in which your research is carried out (Creswell & Creswell, 2018; Hall, 2013). As a starting point it is important to acknowledge that this research is interested in both agri-food systems planning and capacity in the context of municipal planning. The nature of these topics provides a starting point for identifying and articulating a compatible methodological paradigm.

Capacity as a concept includes both quantitative (e.g., staffing, budget) and qualitative (e.g., departmental structure, community relations) factors and as a result researchers looking at capacity often combine both quantitative and qualitative methods (Christensen & Gazley, 2008; Loh, 2015). Within academic research, mixing quantitative and qualitative methods is controversial and was extensively discussed as part of “the paradigm wars” in the 1970s and 80s (Guba, 1990; Hall, 2013; Johnson & Onwuegbuzie, 2004). Mixed methods as a methodological paradigm emerged around this same time and sits firmly in the middle of this debate (Maxwell et al., 2015; Migiro & Magangi, 2011). Mixed methods can be conceptualized as a “third chair”, between quantitative and qualitative paradigms, or as simply the space between quantitative and qualitative paradigms on a continuum (Johnson & Onwuegbuzie, 2004, p. 4). Mixed methods is the methodological paradigm that underpins this research.

This research will rely on pragmatism as the philosophical partner for mixed methods (Creswell & Creswell, 2018; Hall, 2013; Johnson & Onwuegbuzie, 2004; Morgan, 2007). Pragmatism can be traced back to the early 1900s and is understood as a worldview that “arises out of actions, situations, and consequences rather than antecedent conditions” (Creswell & Creswell, 2018, p. 48). Pragmatism is concerned with “what works” and prioritizes problem solving and outcomes (Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004; Shannon-Baker, 2016; Rossman & Wilson, 1985). At the same time, pragmatism takes an “explicitly value-oriented approach” (Johnson & Onwuegbuzie, 2004, p. 5) and recognizes that research is inherently political (Creswell & Creswell, 2018). It is worth noting that planning theory and practice has been, and continues to be, informed by pragmatism (Faludi, 1987; Healey, 2009; Hoch, 2019).

In the context of research methodology, pragmatism encourages the researcher to select the combination of research methods that best address their research questions, goals, and objectives (Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004). Municipal agri-food systems planning capacity as a research topic is well suited to a methodological paradigm and associated philosophical partner that prioritize a practical research process and embraces the messiness of combining quantitative and qualitative methods.

Section 3.2 discusses the history of mixed methods as a methodological paradigm, introduces pragmatism as the philosophical partner for mixed methods research, addresses the ontological and epistemological implications of these choices, and discusses how mixed methods informs this research.

3.2.1 Mixed methods as a methodological paradigm and a methodology

In the academic literature, mixed methods are discussed as a methodology, a philosophy, a paradigm, and a transformative perspective (Creswell, 2015; Johnson & Onwuegbuzie, 2004). Depending on which view the author takes, a different definition, origin story, and evolutionary tale will be provided (Creswell, 2015). It is therefore important to state that in the context of this research, mixed methods is discussed as a methodological paradigm and a methodology. Tashakkori and Creswell (2007) define mixed methods as “Research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both quantitative and qualitative approaches or methods” (p.3). Similarly, Creswell (2015) defines mixed methods as:

An approach to research in the social, behavioral, and health sciences in which the investigator gathers both quantitative (close-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems. (p. 2)

Creswell and Creswell (2018) provide a more in-depth description of mixed methods based on the work of Johnson et al. (2007), and list five elements that mixed methods includes:

1. It involves the collection of both quantitative (closed-ended) and qualitative (open-ended) data in response to research questions or hypotheses.
2. It includes the rigorous methods (i.e., data collection, data analysis, and interpretation) of both quantitative and qualitative data.
3. The two forms of data are integrated in the design analysis through merging the data, explaining the data, building from one database to another, or embedding the data within a larger framework.
4. These procedures are incorporated into a distinct mixed methods design that indicates the procedures to be used in a study.
5. These procedures are often informed by a philosophy (or worldview) and a theory. (p 297).

Mixed methods as a methodological paradigm, is unique in that it celebrates pluralism in research methods and provides researchers the freedom to identify a suite of approaches that best suits their research questions. Mixed methods research prioritizes practical solutions and draws on the strengths of both quantitative and qualitative methods and data (Johnson & Onwuegbuzie, 2004). Central to this understanding of mixed methods is that the integration of quantitative and qualitative data will yield better or more complete insights than either data type would alone (Creswell & Creswell, 2018; Shannon-Baker, 2016). In this context, quantitative and qualitative methods are selected in a way that takes advantage of the strengths and minimizes the weaknesses of each method in seeking to address the research question(s).

3.2.2 A brief history of mixed methods

Mixed methods as a methodological paradigm emerged in the later half of the 1900's and is most commonly traced back to a study completed by Campbell and Fisk in 1959 in the field of psychology (Migiro & Magangi, 2011). In their work Campbell and Fiske (1959) recognized the limits of using a single research method and used multiple quantitative methods to triangulate their findings. Using multiple methods that result in the same type of data is now called

multimethod and has emerged as being distinct from mixed methods (Hall, 2013; Migiro & Magangi, 2011; Teddlie & Tashakkori, 2009), however, at the time, Campbell and Fiske's work was pivotal and encouraged a shift towards more pluralistic research methods. Other notable scholars in the early years include Sieber (1973) who looked to integrate qualitative fieldwork and survey methods and Jick (1979) who was the first to take significant interest in combining quantitative and qualitative data through the triangulation of data sources (Creswell & Creswell, 2018; Migiro & Magangi, 2011).

Early progress in the field of mixed methods research was slowed by what has come to be known as the "the paradigm wars" - the debate between quantitative and qualitative researchers about the merits of their respective philosophical paradigms; this debate also included discussion around the validity of combining methods based on incompatible philosophical worldviews (Hall, 2013; Johnson & Onwuegbuzie, 2004; Migiro & Magangi, 2011). Around this same time, pragmatism was introduced as the philosophical partner for mixed methods (Migiro & Magangi, 2011). Interest in mixed methods persisted and in the early 1990's scholars were exploring ideas around research design and the integration of quantitative and qualitative data (Dickstein, 1998; Creswell & Creswell, 2018; Shields, 2005). Key authors during the late 1980's and early 1990's include: John Brewer, Albert Hunter, Alan Bryman, Jennifer Greene, and John W. Creswell (Creswell & Garrett, 2008).

While Campbell and Fiske's work is commonly cited as the origins of mixed methods research, the discussion of mixed methods can be traced even further back (Johnson and Gray, 2010; Maxwell and Loomis, 2003; Maxwell et al., 2015). For example, Johnson and Gray (2010) and Maxwell et al. (2015) quote a textbook by Fry from 1934 which states, "the really creative part of a social inquiry is deciding how different approaches should be combined to yield the most fruitful results" (p. 136). To contrast this earlier date, Creswell and Creswell (2018) suggest that mixed methods (as a methodology) emerged in "the late 1980s and early 1990s" (p. 297). Regardless of the date of origin, there is general consensus that mixed methods evolved in the later part of the twentieth century and is still evolving today (Creswell & Creswell, 2018; Creswell & Garrett, 2008; Leech & Onwuegbuzie, 2009).

In terms of contributing disciplines, mixed methods emerged from diverse fields of study, including: education, healthcare, evaluation, management, and sociology (Creswell & Creswell, 2018; Creswell, 2015). Creswell (2015), also provides that mixed methods are seen as having Anglo-American roots. There are many terms associated with mixed methods including: integrative, blended, multimethod, quantitative and qualitative methods, mixed research, multistrategy, and mixed methodology, quasi-mixed methods (Creswell, 2015; Creswell & Creswell, 2018; Tashakkori & Teddlie, 2009). Over the years, the number and variability of these terms has reduced and “mixed methods” has emerged as a “standard label” (Creswell, 2015, p. 112). Today mixed methods is well established as the third methodological movement (Hall, 2013), and has its own dedicated academic journal (Journal of Mixed Methods Research, JMMR) and international association of scholars (Mixed Method International Research Association) (Creswell, 2015).

3.2.3 Mixed methods in search of a philosophical partner

At this point it seems important to take a step back and address one of the biggest challenges facing mixed methods research, the challenge of philosophical foundations (Hall, 2013, Teddlie & Tashakkori, 2003). This challenge stems from “the paradigm wars” and the opinion that quantitative and qualitative research and data are underpinned by incompatible philosophical paradigms (Hall, 2013; Shannon-Baker, 2016). This challenge is also related to the paradigm-method fit issue which questions whether or not research methods and philosophical paradigms need to fit together (Migiro & Magangi, 2011). Over the years, a number of solutions have been proposed. The three most commonly discussed solutions are summarized well by Hall (2013):

These approaches can be classified into three basic categories: a paradigmatic stance, multiple paradigm approach and the single paradigm approach. The first of these simply ignores paradigmatic issues altogether; the second asserts that alternative paradigms are not incompatible and can be used in the one research project and the third claims that both quantitative and qualitative research can be accommodated under a single paradigm. (p. 2)

Paradigm in this context refers to worldview or philosophical foundations (Creswell & Creswell, 2018; Guba, 1990; Hall, 2013; Tashakkori & Teddlie, 2009). Guba (1990) defines worldview as “a basic set of beliefs that guide action” (p. 17). Creswell & Creswell (2018) provide further clarity and explain that a worldview can be understood “as a general philosophical orientation about the world and the nature of research that a researcher brings to a study” (p. 44).

This research considers a single paradigm approach (as mentioned above by Hall (2013)) with pragmatism as the single paradigm that underpins the research. Pragmatism is commonly discussed as the philosophical partner for mixed methods research (Creswell & Creswell, 2018; Hall, 2013; Johnson & Onwuegbuzie, 2004; Morgan, 2007). It is also worth noting that planning as a field of practice and research is in many ways pragmatic and that this research looks to continue conversations about “what it takes to actually do planning work” (Healey, 2009, p. 278).

3.2.4 Pragmatism as a philosophical foundation

The origins of pragmatism can be traced back to the early 1900’s (Cherryholmes, 1992). Classical pragmatism is largely associated with three founding scholars, Charles Peirce, William James, and John Dewey (Healey, 2009; Johnson & Onwuegbuzie, 2004). Peirce, James, and Dewey were interested in the role of scientific inquiry and intrigued by ideas around human evolution and different ways of knowing and being (Healey, 2009). There are many versions of pragmatism, however there is general consensus that “pragmatism as a worldview arises out of actions, situations, and consequences” (Creswell & Creswell, 2018, p. 48). Pragmatism is concerned with problem solving, outcomes, and prioritizes “what works” (Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004; Shannon-Baker, 2016; Rossman & Wilson, 1985).

Rossemann and Wilson (1985) are among the first authors to associate pragmatism as the philosophical foundation for mixed methods research (Migiro & Magangi, 2011). In their work Rossman and Wilson (1985) assert that there is a false dichotomy between quantitative and qualitative methods (citing the work of Denzin (1970) and Daft (1983)) and that researchers should leverage the strengths of both methods to most effectively address the research

question at hand; this sentiment is echoed by Morgan (2007), Tashakkori and Teddlie (2010), and Creswell and Creswell (2018). Doyle et al. (2009) comments on the relationship between pragmatism and mixed methods, stating that “The philosophy of pragmatism advanced the notion that the consequences are more important than the process and therefore that ‘the end justifies the means’ ” (p. 4).

Below is a summary of some of the key attributes of pragmatism, relevant to mixed methods, as discussed by the literature:

- Takes an “explicitly value-oriented approach” (Johnson & Onwuegbuzie, 2004, p. 5) and recognizes that research is inherently political (Creswell & Creswell, 2018).
- Values both objective and subjective knowledge (Cherryholmes, 1992; Migiro & Magangi, 2011).
- Is oriented to the research question and encourages researchers to select the combination of methods that best address their research question (Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004).
- “Is not committed to any single system of philosophy and reality” (Creswell & Creswell, 2018, p. 48).
- Believes that the truth is “what works” and is temporally bound (Creswell & Creswell, 2018; Migiro & Magangi, 2011).
- Prioritizes “communication and shared meaning-making in order to create practical solutions to social problems” (Shannon-Baker, 2016, p. 4).
- Considers transferability of findings to other settings (Morgan, 2007; Shannon-Baker, 2016).
- Practices intersubjectivity (Morgan, 2007).

- Sees the world in terms of pluralism rather than an absolute unity (Creswell & Creswell, 2018).

While pragmatism appears to be a good fit for this research, there are several other worldviews associated with mixed methods (Creswell & Creswell, 2018; Hall, 2013; Shannon-Baker, 2016). Migiro & Magangi (2011) refer to this as “the best paradigm issue” which allows mixed methods researchers to choose the philosophical foundation(s) that best suits their research question. Shannon-Baker (2016) points out that pragmatism is slightly different from other identified philosophical paradigms in that it “does not purport to present an entirely encompassing worldview” (p. 7). To further complicate this discussion, whether or not philosophical paradigms are even useful to mixed methods research is a contested topic (Maxwell, 2011; Shannon-Baker, 2016) and Hall (2013) suggests that none of the existing philosophical paradigms provide sufficient justification for mixed methods. Nevertheless, pragmatism persists as the most commonly discussed and supported philosophical partner for mixed methods research (Creswell & Creswell, 2018; Hall, 2013; Johnson & Onwuegbuzie, 2004; Morgan, 2007).

3.2.5 Ontology, epistemology, and purported values of mixed methods

Mixed methods does not have a single ontology or epistemology. This is reflected by the purported values of mixed methods which emphasize creative and diverse research methods, leveraging the strengths of both quantitative and qualitative data, selecting the concepts and methods that best address the research question, and finding workable solutions (Johnson & Onwuegbuzie, 2004). Furthermore, mixed methods does not pretend to provide “perfect” solutions, instead it focuses on “what works” best at the time (Creswell & Creswell, 2018). Mixed methods encourages epistemological, ontological, and methodological pluralism (Johnson & Onwuegbuzie, 2004).

3.2.6 Strengths and limitations of mixed methods

Strengths of mixed methods as a methodological paradigm include a more complete or holistic understanding of the research problem, data validation, theory development and testing, and the ability to use complementary methods to elaborate on, fill gaps, or explain, results from

another method (Johnson & Onwuegbuzie, 2004; Migiro & Magangi, 2011; Morgan, 2018). Mixed methods is premised on the idea that quantitative and qualitative methods can be used together to maximize their strengths and minimize limitations (Creswell & Creswell, 2018; Morse & Maddox, 2013). That being said, there are a number of criticisms about mixed methods. Methodological purists argue that the lack of commitment to one ontology or epistemology and the use of multiple philosophical paradigms undermines the validity of mixed methods (Hall, 2013; Johnson & Onwuegbuzie, 2004; Migiro & Magangi, 2011). This argument is related to both “the best paradigm issue” and “the paradigm-method fit issue” which were discussed previously (Migiro & Magangi, 2011; Shannon-Baker, 2016). Both of these issues are a result of “the paradigm wars” and the argument that quantitative and qualitative methods and their associated philosophical paradigms are exclusive and incompatible (Howe, 1988; Guba, 1990; Hall, 2013; Johnson & Onwuegbuzie, 2004).

In contrast to the above debate, the “indistinguishability thesis” questions whether one can distinguish between quantitative and qualitative methods (Hammersley, 1996; Morgan, 2018). This debate is also related to “the paradigm wars” and raises some questions for mixed methods research which is premised on the idea that quantitative and qualitative methods are different and have different strengths (Morgan, 2018). Morgan (2018) draws on Sandelowski (2014), and brings attention to the role of judgment in mixed methods research, “Without consensual standards within a field, we cannot say when the use of a method was strong or weak, appropriate or inappropriate, and so on” (p. 8).

Sommer Harrits (2011) highlights the “problem of causal inference” and the “problem of double hermeneutics”. Both of these are argued to be epistemological problems associated with mixed methods research. Based on these concerns Sommer Harrits (2011) argues that mixed methods research is not a single methodological paradigm “but is founded within different paradigms” (p. 2).

Additional limitations and consequences of mixed methods include: extensive data collection, increased time and cost demands, challenges associated with combining quantitative and qualitative data, conflicting results, and increased complexity/logistics (Johnson &

Onwuegbuzie, 2004; Migiro & Magangi, 2011; Maxwell et al., 2015). Furthermore, researchers using mixed methods must be familiar with both quantitative and qualitative research methods and data analysis (Creswell & Creswell, 2018).

3.2.7 Explanatory, exploratory, and convergent mixed methods

Before discussing the specifics of mixed methods in the context of this research project, it is important to acknowledge the three core approaches to mixed methods - explanatory sequential mixed methods, exploratory sequential mixed methods, and convergent mixed methods. Creswell (2015) and Creswell and Creswell (2018) provide an excellent overview of these three approaches.

1. Explanatory sequential mixed methods rely on two distinct phases of data collection and analysis, starting first with quantitative research and then using qualitative research to add detail and richness to the data. This approach is explanatory in the sense that qualitative data is used to explain earlier quantitative findings (Creswell & Creswell, 2018; Fetters et al., 2013). Challenges associated with this approach include different sample sizes during the two different phases of research, and the identification of which findings to further explore using qualitative methods (Creswell & Creswell, 2018). An example of explanatory sequential mixed methods is an analysis of census data followed by interviews with members from identified groups to help explain the initial results.
2. Exploratory sequential mixed methods is similar to the previous approach in that it relies on two phases of data collection, the difference here is that qualitative data is collected first and used to design the quantitative phase of data collection (Creswell & Creswell, 2018). This approach is exploratory in the sense that findings from an initial qualitative phase of research are used to explore and inform the second quantitative phase of research. Challenges common to this approach include “focusing in on the appropriate qualitative findings to use and the sample selection for both phases of research” (Creswell & Creswell, 2018, p. 52). An example of exploratory sequential mixed methods

would be conducting interviews with key informants to explore a topic, and using those results to inform the creation of a survey on the same topic.

3. The third approach is convergent mixed methods, and is distinct from the previous two in that quantitative and qualitative data collection is carried out in tandem. This approach requires that data from both methods be merged and analyzed together (Creswell, 2015; Fetters et al., 2013). Challenges to this approach include the logistics of integrating the two types of data, contradictions or disagreement between research findings, and challenges associated with different sample sizes (Creswell & Creswell, 2018). Creswell and Creswell (2018) argue that this approach is similar to the work of Campbell and Fiske (1959) who combined multiple quantitative methods to build a greater or more complete understanding. An example of convergent mixed methods would be collecting survey and interview data at the same time, and analyzing the two data sources together.

3.2.8 Convergent mixed methods and this research

A convergent mixed methods research methodology has been selected for this research for several reasons. First and foremost, municipal agri-food systems planning capacity should be considered holistically and includes factors that are both quantitative (e.g., staffing, budget) and qualitative (e.g., departmental structure, community relations). Capacity also includes individual, organizational, and systems level aspects (UNDP, 1998; Isaza et al., 2015; Saguin et al., 2018; van Kerkhoff & Lebel, 2015). This means that not only are there multiple quantitative and qualitative factors that contribute to capacity, but these factors exist at different levels and scales and must be considered holistically (Morgan, 2005). Central to mixed methods is the idea that researchers should select the combination of methods that best addresses their research questions (Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). This research includes a literature review, survey and interview data collection, and secondary data sources. These methods were selected based on the identified research questions and objectives (see Table 3.1).

Table 3.1 - Summary of research phases		
Phase	Methods	Output
Phase 1 - Literature review	Literature review	Initial conceptual framework
Phase 2 - Data collection	Primary data: Survey questionnaires and semi-structured interviews (in tandem) Secondary data: Urban-rural classification, MMAH Municipal Service Office regions, and municipality type and boundary data	Quantitative and qualitative data
Phase 3 - Data analysis	Quantitative analysis: Data visualization, statistical analysis Qualitative analysis: Thematic analysis	Quantitative and qualitative results Modified conceptual framework

Mixed methods are also regarded for producing more “complete knowledge” that can inform both theory and practice (Migiro & Magangi, 2011; Teddlie & Tashakkori, 2009). This is fitting as the impetus for this research relates to both planning theory and practice. This research looks to understand municipal capacity and how municipalities can better support local and regional agri-food systems, as well as develop a conceptual framework for municipal agri-food systems planning capacity that can be used to inform planning practice and research.

Another important aspect of mixed methods for this research is the potential for mixed methods to reveal contradictions (Creswell & Creswell, 2018; Teddlie & Tashakkori, 2009). This was previously mentioned as one of the challenges of mixed methods. However, in the context of capacity, contradictions reveal nuances in the formulation of capacity. For example, a municipality may have significant staff and budgetary resources, but capacity may be hampered by council’s knowledge or value of agri-food systems.

In addition to the research topic and identified research questions, Creswell and Creswell (2018) identified two additional factors to consider when selecting a methodological paradigm - your personal experience as a researcher and your audience. Members of the research team are experienced in interdisciplinary research and working with quantitative and qualitative data collection and analysis (including integrating findings). Additionally, University of Guelph resources were consulted throughout the duration of this project including the OAC Statistics Consultant, and Library Writing Services and Data Support Staff. Throughout the data analysis and writing processes the multiple audiences of this research (e.g., policymakers, researchers, municipal planners) were considered with the intent of developing different communications products tailored to specific needs.

3.3 Research design and methods

This research relies on a variety of methods to address the research questions and objectives in a holistic and pragmatic manner. Phase 1 of the research included a literature review of agri-food systems planning and capacity (as it relates to municipal planning). This literature review informed an initial conceptual framework for municipal agri-food systems planning capacity in Ontario. Phase 2 and Phase 3 of the research design followed a convergent mixed methods approach. The second phase is focused on primary data collection including both survey questionnaires and semi-structured interview data (with municipal planning staff and elected officials), as well as the identification of secondary data sources. In the third phase, primary and secondary data were integrated as part of the data analysis process which included thematic analysis, data visualization, and statistical analysis. Table 3.1 summarizes the sequence of data collection and analysis methods used for this research. Table 3.2 provides a summary of the research questions, objectives, and methods, and how they relate to one another. Section 3.3 will outline the research approach used for this project, including the creation of an advisory committee, the pilot study completed in 2020, and the three phases of research conducted (Phase 1 - Literature review, Phase 2 - Data collection, and Phase 3 - Data analysis).

Table 3.2 - Summary of research questions, objectives, and methods

Research questions	Objectives	Methods
RQ1. How can municipal agri-food systems planning capacity be conceptualized?	1	Literature review and semi-structured interviews
RQ2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario? Sub Questions: 2.1 What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity? 2.2 Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies? 2.3 How does municipal agri-food systems planning capacity vary across the province?	1, 2, 3	Survey questionnaires, semi-structured interviews, and secondary data
RQ3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?	4	Survey questionnaires and semi-structured interviews
RQ4. What best practices and resources would strengthen municipal agri-food systems planning capacity?	5	Semi-structured interviews
Research objectives: 1. Develop a conceptual framework for municipal agri-food systems planning capacity in Ontario. 2. Investigate the capacity of municipal planning departments to respond to and support agri-food systems in Ontario. 3. Evaluate the capacity of municipalities to implement Ontario's agri-food systems land use policies (including Minimum Distance Separation (MDS), agricultural impact assessments, agricultural systems approach, and the Farming and Food Production Protection Act). 4. Explore how municipal agri-food systems planning capacity is supporting local and regional agri-food systems actors, interactions, and functions. 5. Identify strategies to strengthen municipal agri-food systems planning capacity in Ontario.		

3.3.1 Research team and advisory committee

The research team for this project included:

- Dr. Wayne Caldwell, principal investigator;
- Regan Zink, lead researcher and report author;
- Shanley Weston, research assistant; and
- Natasha Gaudio Harrison, research assistant.

In addition to the research team, this research was guided by an advisory committee of municipal planners, OMAFA staff, and agri-food systems stakeholders. The advisory committee met three times throughout the duration of the project, on June 22, 2021, June 28, 2022, and February 20, 2024, and provided input on research methods, key findings, and communication efforts. Each year the topic and discussion of the advisory meeting reflected the Phase of the project being worked on and any progress that had been made since the previous meeting.

3.3.2 Pilot study

It should also be noted that this research and research methodology builds on a pilot study that was completed in 2020 by Dr. Wayne Caldwell and his research team at the University of Guelph (including Regan Zink). The 2020 pilot study was funded by the Greenbelt Foundation, and looked at 66 municipalities within Ontario's Greenbelt. The results of the pilot were published in the International Journal of Environmental Impact (see Caldwell et al., 2020 and Caldwell et al. 2021). A similar advisory committee was established for the pilot study and provided key feedback during the initial preparation of data collection tools (including the survey questionnaire and semi-structured interview guide).

3.3.3 Phase 1 - Literature review

Phase 1 of the research included a literature review of agri-food systems planning and capacity as it relates to municipal planning. Two different documents resulted from this effort. The first document is published as a conference proceeding titled *Local Agri-food Systems as a Municipal*

Priority - Considering the Role, Approach and Capacity of Municipal Planning Departments that was published by WITpress in early 2022 (see Appendix E for a copy of this document). This publication is the result of a literature review focused on better understanding the role and approach of municipal planning departments in agri-food systems in Ontario.

The second document that was prepared as part of Phase 1 was a Qualifying Exam paper which addresses two key questions:

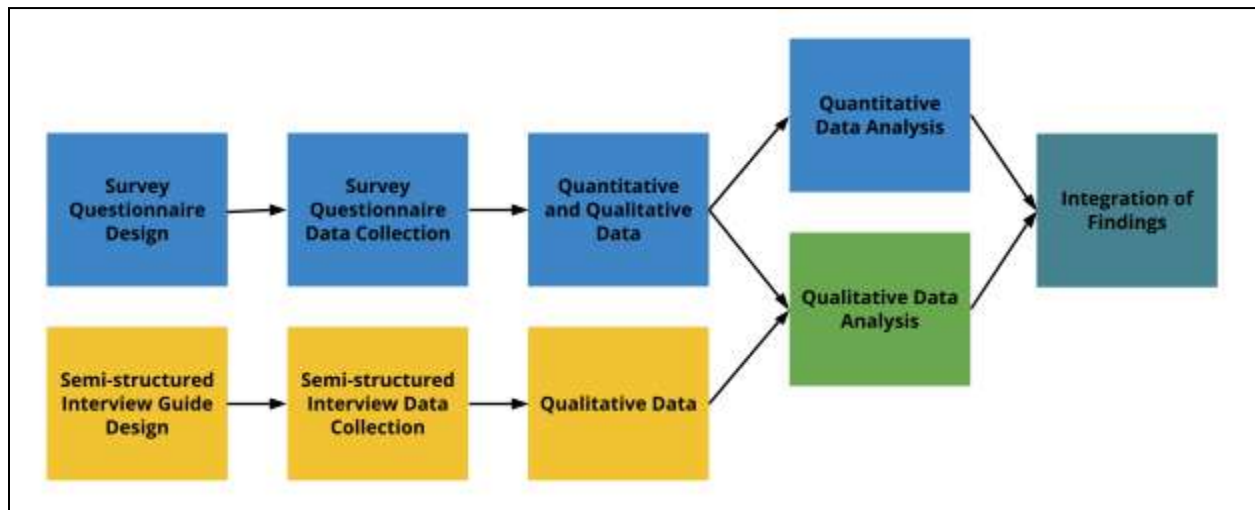
1. What is agri-food systems planning and what does it look like? What are the roles and tools available to planners?
2. How can capacity, as a conceptual tool, inform our understanding of agri-food systems planning?

Building on these questions, an initial conceptual framework for municipal agri-food systems planning capacity was proposed. Chapter 2 is a modified version of the Qualifying Exam paper. The original Qualifying Exam paper (submitted July 3, 2023) is included in Appendix F.

3.3.4 Phase 2 - Data collection

Phase 2 of the research was focused on primary data collection and the identification of secondary data sources. This phase of the research follows a convergent mixed methods research design (see Figure 3.1). In convergent mixed methods, quantitative and qualitative research is carried out in tandem and the data from both methods is merged and analyzed together (Creswell & Creswell, 2018; Creswell, 2015; Fetters et al., 2013). This research employed both survey questionnaires and semi-structured interviews with municipal planners and elected officials. Secondary data included urban-rural classification, MMAH Municipal Service Office regions, and municipality type and boundary data which were used to organize and assist with analysis of primary data. Figure 3.1 outlines the convergent mixed methods design used for this research.

Figure 3.1 - Convergent mixed methods design, adapted from Harinarain et al. (2023)



3.3.4.1 Municipalities in Ontario

In Ontario there are 444 municipal governments; including 30 upper-tier municipalities (regional governments), 144 lower-tier municipalities (local governments), and 173 single-tier municipalities (29 in southern Ontario and 144 in northern Ontario). Wegener et al. (2013) distinguish between regional (upper-tier) municipalities, who are responsible for “matters of regional importance and scale (e.g., regional land use planning, public health, transit)”, and area (lower-tier) municipalities, who are responsible for “all other matters of community or neighbourhood character” (e.g., zoning, community land use planning, development review, etc.) (p. 7). Single-tier municipal governments are a hybrid of the two. In all cases, municipal planning departments are responsible for balancing provincial directives and local needs.

Municipalities and planning boards in northern Ontario

Since this research is interested in the entirety of Ontario, it is important to recognize some key differences related to municipal land use planning in northern Ontario. In northern Ontario, all municipalities are single-tier municipalities and there is a significant amount of land that is not governed by a municipal government (see Figure 3.2 on page 97). In areas of northern Ontario that are outside of municipal government boundaries, planning services and responsibilities are shared by the Ministry of Municipal Affairs and Housing (MMAH), Ministry of Natural Resources (MNR), and planning boards (MMAH, 2023a). There are 17 planning boards in Ontario, and they

only cover a portion of the areas in northern Ontario that have no municipal organization. Furthermore, the geographic makeup of each planning board is unique and can include both municipal and unorganized township lands. Appendix G includes a List of Planning Boards in northern Ontario including their geographic coverage. Planning boards, like municipal governments, are responsible for planning functions of their given jurisdiction, including preparing and implementing official plans and zoning by-laws, and providing advice to decision-making authorities (including municipal councils) on matters related to land use planning (MMAH, 2023a). A map of planning board coverage areas is not included because this data is not readily available.

3.3.4.2 Study area

The initial study area for this research included the 30 upper-tier municipalities and 173 single-tier municipalities in Ontario. This was later expanded to include planning boards as well as the 214 lower-tier municipalities (survey data collection methods only). As a result all 444 municipalities were considered through the research process and invited to participate. Including lower-tier municipalities was the result of interest from lower-tier planners and council members.

3.3.4.3 Recruiting participants

As previously mentioned, this research employed both survey questionnaires and semi-structured interviews with municipal planners and elected officials. Participants were recruited using purposive sampling. Purposive sampling is an approach to identifying participants based on predetermined criteria (Berg & Lune, 2017). Palys and Atchison (2008) cite Morse (1994) who explains that a good informant is someone who “has the knowledge and experience the researcher requires, has the ability to reflect, is articulate, ... and is willing to participate in the study” (p.228).

For this research, key informants were selected based on their membership in one of two groups: 1) their role as a municipal elected official or 2) the most senior member of each municipal planning department (or similar). These two groups were identified based on their

role in municipal agri-food systems planning and their potential knowledge and experience related to the topic.

Establishing a contact database

The unit for analysis for this research is municipal governments. Using purposive sampling, key informants from each municipality were invited to participate. The AMCTO Ontario Municipal Directory was used to establish a preliminary database of municipal elected official and planning staff contact information. The preliminary database was augmented with contact information listed on municipal and planning board websites in cases where the AMCTO data was incomplete or outdated.

The final database included all members of municipal councils in Ontario as well as the most senior member of each municipality (e.g., planning director). For municipalities without a planning department or planning staff, or where contact information was not available, the Chief Administrative Officer (CAO), clerk, or chief building official contact information was listed. For planning boards, staff were identified through planning board websites.

3.3.4.4 Primary data: Survey questionnaires and semi-structured interviews

Primary data collection for this project included three main methods:

1. A survey sent to elected officials,
2. A survey sent to the most senior planner (or similar), and
3. A semi-structured interview with a member of the planning department (upper- and single-tier municipalities only).

A copy of each data collection tool is included in the Appendices: Appendix A - Elected Official Survey Questionnaire; Appendix B - Planner Survey Questionnaire; Appendix C - Planner Semi-structured Interview Guide. Appendix D includes the University of Guelph Research Ethics Board Approval for this project.

The survey questionnaire and semi-structured interview guide questions were developed based on existing literature related to municipal agri-food systems planning capacity (including the pilot study), as well as advice from the advisory committee. The data collected through these two research methods provides insights regarding a wide range of factors related to municipal agri-food systems planning capacity across Ontario, including, planning department composition, municipal priorities, the perceived level of support for agri-food systems, barriers and constraints, partnerships and collaborations, and best practices for agri-food systems planning in Ontario.

Combining survey and interview data to investigate municipal planning capacity

Combining survey and interview data has been used by other researchers looking at planning capacity, including Heim LaFrombois et al.'s (2022) who used surveys and interviews to “collect detailed information on planning practices and capacity, experiences, opportunities, and constraints” in the context of green infrastructure planning (p. 5). Similarly, Norton et al. (2018) used structured surveys and unstructured interviews with local officials to investigate municipal planning efforts related to coastal land use planning. Khan et al. (2020) combined survey questionnaires and semi-structured interviews to investigate the perspective and capacities of public institutions related to managing climate change in the agricultural sector. Carmona (2023) identifies both survey questionnaires and semi-structured interviews as being particularly helpful methods when looking at issues that pertain to local government and planning processes.

In the context of this research, collecting survey and interview data in tandem allowed for a more holistic investigation of municipal agri-food systems planning capacity. This is supported by McGuirk and O’Niell (2016) who discuss the benefits of using survey questionnaires to provide a framework for more “in-depth interviews, allowing key themes, concepts, and meanings to be teased out and developed” (p.247). Through combining survey questionnaires (including closed, open, and combination questions) and semi-structured interview methods, this research captured the breadth and depth of data necessary to investigate municipal agri-food systems planning capacity in Ontario and address the identified research questions

and objectives. The following subsections provide more specific information about each method as well as the specific data collection protocol used for this project.

Survey questionnaires

Survey questionnaires are frequently used in mixed methods research that looks to incorporate both quantitative and qualitative sources and analysis (McKendrick, 2020; McGuirk & O'Neill, 2016). Mixed-methods questionnaires (questionnaires that collect both quantitative and qualitative data) first appeared in the 1970s with the rise of behavioural geography and have since grown in popularity and are used to investigate a wide range of complex issues (Gold, 1980; McGuirk & O'Neill, 2016). Strengths of survey data collection methods include: ability to provide insights into trends, processes, values, and conceptualizations from a well-informed group, relatively low cost and ability to collect data from a large geographic area, and flexibility as a research method and ability to be combined with complementary data collection methods (Blair et al., 2014; Preston, 2020; McGuirk & O'Neill, 2016).

Carmona (2023) suggests that “surveys can be a valuable approach to capture large datasets from a wide range of governmental organisations” and that surveys are well suited to research looking at existing practices (p. 20). While Carmona’s field of research is focused on urban design, as opposed to agri-food systems planning, the nature of their research questions and objectives share many similarities to this research. For example, Carmona used survey questionnaires to study the availability of design knowledge and skill in local governments (Carmona & Giordano, 2017), investigate the role of local councils in decision making related to design (Carmona et al., 2019), and identify innovative practices related to urban design governance (Carmona et al., 2023).

While surveys are certainly a common research method, they are not without drawbacks. Survey length, question types, inadvertent bias, format, and dissemination method are some of the key concerns related to the design of survey questionnaires (McGuirk & O'Neill, 2016). In the context of surveying busy government staff and elected officials, Carmona (2023) highlights challenges related to response rates, and emphasizes the need for personalized communications including email and phone calls.

Survey questionnaires were selected for this research for their ability to collect both quantitative and qualitative data from hundreds of municipalities across a large geographic area. Survey questionnaires also provided the opportunity to inform municipal staff and elected officials about the research and to get them thinking about agri-food systems planning in their municipality. Another benefit of survey data collection is that it is less demanding of participants than semi-structured interviews. Planners and elected officials who feel they do not have time or resources to participate in a semi-structured interview may still opt to participate in the research by completing the survey.

Survey questionnaires: Municipal planning staff and elected officials

For this research, survey questionnaires were used to collect data from both municipal elected officials and municipal planning staff. Appendix A includes a copy of the Elected Official Survey Questionnaire and Appendix B contains the Planner Survey Questionnaire. Both surveys were administered online through Qualtrics. All contacts included in the database discussed in Section 3.4.4.3 were invited to participate.

Initial email invitations were sent from the researchers University of Guelph Outlook email address with recipients blind-copied on the email. Two follow-up reminders were sent to each contact at a 2-3 week interval. For each survey type, reminders were only sent to municipalities who had not yet responded by either completing the survey or declining the invitation. All email invitations, reminders, and follow-up correspondence occurred between June 2022 and October 2022. Email invitations and reminders were sent on Tuesday or Wednesday mornings, and not during weeks that contained statutory holidays (e.g., Canada Day, Civic Holiday). Additionally, the research was announced through a number of relevant organizations including Rural Ontario Municipal Association (ROMA), Association of Municipalities of Ontario (AMO), the Canadian Rural Revitalization Foundation, OPPI Planners Connect, the County Planning Directors listserv, and the School of Environmental Design and Rural Development at the University of Guelph.

The email invitation included a high level overview of the project, research goals, time commitment involved in participating, and information about the research team and project

fundings. Attached to the email was a formal invitation letter with more detailed information about the project background and rationale, research methods, anonymity and confidentiality, the benefits of participating. Both the email and letter included a link to the Qualtrics survey.

The landing page of Qualtrics included much of the same information that was outlined in the formal invitation letter, including the voluntary nature of the survey, details regarding anonymity and confidentiality, and the benefits of participating. Survey respondents acknowledged their rights as a participant and provided consent to participating in the research by clicking “next” and progressing through the survey. Both surveys were designed to take 10-15 minutes to complete.

The survey questions covered topics related to municipal agri-food systems planning capacity, including: descriptive attributes about the planning department (e.g., number of planners, reliance on planning consultants), involvement in agri-food systems planning, knowledge and background on council and staff, and knowledge of specific agri-food systems policies (e.g., Minimum Distance Separation), among other things (see Appendix A - Elected Official Survey Questionnaire and Appendix B - Planner Survey Questionnaire for a complete summary of the survey questionnaires). The survey was designed to capture both quantitative data and qualitative data regarding municipal agri-food systems planning capacity through closed, open, and combination questions (McGuirk & O’Neill, 2016).

Closed questions relied on the knowledge of the research team and advisory committee, constraining respondents to the responses that were viewed as possible. Closed questions provided data that can be easily grouped and used to make comparisons between respondents, municipalities, and geographic areas in Ontario. Three main types of closed questions were included in the survey, including attribute information, category list, and scaling type questions (McGuirk & O’Neill, 2016). In some cases an “other” category was added with an accompanying text box (a type of combination question). Open-ended questions provided more freedom for respondents to explain and elaborate on their experiences, understanding, and opinion (McGuirk & O’Neill, 2016).

For both surveys, there were only a couple of required questions including (1) a question to confirm the respondent provided consent to participate in the research, and (2) a question about which municipality the respondent worked for/represented. For the planner survey, a third required question asked respondents to identify how the municipality provided planning services (i.e., planning is its own department, planning is included as part of a larger department, the municipality does not have an internal planning department nor does it employ planning staff). These questions were required because they provided the minimum data necessary to analyze the subsequent survey questions. The remainder of the questions were optional; the research team and advisory committee decided that this approach was desirable as it allowed respondents to skip over questions that they did not wish to respond to (e.g., felt they did not have enough information or felt uncomfortable answering).

Both surveys were closed on November 1, 2022, with the bulk of surveys being received between July and September of 2022. The time period of data collection was in part informed by the municipal election which took place in Ontario on October 24, 2022 and the Provincial election which took place on June 2, 2022. Both surveys went through several rounds of testing with members of the research team and advisory committee. The surveys were also sent out in phases, with only a few municipalities invited to participate in early June, followed by more extensive data collection efforts once confidence in the data collection tools and supporting technology had been established.

It should also be noted that the study area initially focused on upper- and single-tier municipalities, and that survey data collection methods were later extended to lower-tier municipalities as a result of interest in the research from lower-tier planners and council members. The data collection window for lower-tier municipalities was considerably shorter (1 month) than that of upper- and single-tier municipalities (5 months).

Semi-structured interviews

In addition to survey questionnaires, primary data collection for this project included semi-structured interviews. An interview in its most basic form is a conversation. Brinkmann (2018), suggests that conversations have been used as a research/exploration tool for “as long

as [we] have had language and communication” (p. 583). Brinkmann (2018) cites earlier work by Maccoby and Maccoby (1954) who define the interviews as “a face-to-face verbal exchange, in which one person, the interviewer, attempts to elicit information or expressions of opinion or belief from another person or persons” (p.449). In semi-structured interviews both the interviewer and interviewee play an active role in the co-production of knowledge and are given more leeway to engage in dialogue on issues and topics that emerge throughout the interview process (Denzin & Lincoln, 2018; Warren, 2002; Brinkmann, 2018, 2023). Dunn (2010) describes semi-structured interviews as having “some degree of predetermined order but maintains flexibility in the way issues are addressed by the informant” (p. 102).

Dunn (2010) identifies four instances where semi-structured interviews are used: (1) to complement other methods and fill gaps in data and understanding that other methods cannot address; (2) to explore the behaviour and motivation of people; (3) to capture richness in meaning, experiences, and personal opinion; and (4) to engage with participants as an informant and a critical and valued contributor to the research. Semi-structured interviews are particularly good at harnessing the knowledge-producing potential of conversation and dialogue are recognized for their utility in exploring perceptions, opinions, and experiences of social life (Brinkmann, 2018, 2023; Dowling et al., 2016; Warren, 2002).

Dunn (2010) suggests that “one of the major strengths of interviewing is that it allows you to discover what is relevant to the informant” (p. 103). Dunn (2010) also notes that “Interviews provide insight into the different opinions or debates within a group, but they can also reveal consensus on some issues” (p. 102). Silverman & Patterson (2015) add to this that interviews “are particularly useful to professionals studying applied policy questions in professional fields ... to gain an in-depth understanding of how key stakeholders perceive and understand an issue” (p. 61). In the context of urban design governance, Carmona (2023) explains that “interviews are one of the few techniques that researchers can deploy to understand complex development processes and the aspirations, compromises, power relationships, and trajectories of decision making ... to get the complete picture and to cut through the complexity” (p.18).

While there are many strengths of interview research methods, they are not without their shortfalls. Interviews inherently rely on the relationship and rapport built between the researcher and interviewee (Dunn, 2016). Carmona (2023) emphasizes the importance of building trust through the interview process by leaving space and flexibility within the interview guide to capture diverse viewpoints, and respecting the time interviewees by ensuring discussions stay within the scope of the research project. It is also important to acknowledge that interviewees will provide evidence from their own perspective, and may forget details and/or distort information (e.g., as a result of recall bias or the socially mediated interview process) (Brinkmann, 2018; Carmona, 2023; Dunn, 2016). One way of addressing this is through interviewing multiple informants to look for recurring patterns and shared experiences.

Semi-structured interviews were selected for this research for their ability to collect more nuanced information about municipal agri-food systems planning capacity. More specifically, the semi-structured interviews look to further explore data and evidence that was collected through the survey questionnaires. Semi-structured interviews provided the opportunity for municipal planning department staff to engage in discussion regarding their experiences and perceptions related to agri-food systems planning, barriers and challenges their municipality is facing, and opportunities for increasing support for the agri-food sector.

Semi-structured Interviews: Municipal planning staff

All upper- and single-tier planners, and planning board staff, who completed the planner survey questionnaire received an invitation to participate in a follow-up interview. Appendix C includes a copy of the Planner Semi-structured Interview Guide. Interview participants were recruited through the final question on the planner survey questionnaire which asked participants to provide their contact information if they were interested in participating in a semi-structured interview.

Email invitations for the semi-structured interview were tailored to each respondent and included a formal invitation letter which reiterated project background and rationale, research methods, what participating involved, the benefits of participating, and details around anonymity and confidentiality (including information about the University of Guelph Research

Ethics Board Approval). Both the email invitation and letter included a link to Calendly, an online scheduling platform which showed available interview time slots.

If necessary, up to two follow-up reminders were sent to each survey respondent who indicated interest in participating in a follow-up interview. In some cases researchers phoned participants who had indicated interest in participating in an interview but were not responding to email correspondence. All interviews were conducted during the work week (between 8:00 AM and 6:00 PM) between July 2022 and December 2022. Similar to the survey data collection, both the municipal and provincial elections played a role in timing of interview data collection.

The majority of interviews were hosted on Zoom with the added benefits of increasing sample size, cost savings, and convenience for both the interviewee and interviewer (Dunn, 2016). That being said, respondents who were located in southwestern Ontario were also provided the option for an in-person interview. All interviews were recorded and the resulting audio files uploaded to Otter.ai to generate a transcript. Note taking was also used throughout the interview process to keep track of anything the interviewer found noteworthy, including reflections, as well as connections and similarities to other interviews.

The semi-structured interview was designed to gather more detailed data regarding municipal agri-food systems planning capacity, including: relationships between municipal departments; partnerships with local and regional agri-food organizations; values and perceptions related to local and regional agri-food systems; the history and evolution of municipal agri-food systems planning initiatives; barriers and challenges related to supporting the agri-food sector; and suggestions related to strengthening municipal agri-food systems planning capacity, among other things. The semi-structured interview guide captured qualitative data, using descriptive, storytelling, and opinion type questions (Dunn, 2016).

The semi-structured interview was broadly organized into four groupings of questions including, (1) introduction and understanding agriculture in the municipality, (2) planning department structure, budget, and capacity, (3) agri-food systems programs, policies, and plans, and (4) best practices and final remarks. At the outset of the interview respondents were informed they

could skip questions at any time and were encouraged to request clarification if needed. The semi-structured interview guide (Appendix C) acted as a general outline for the interview, but discussion and subsequent questions evolved based on respondents' interests and experiences. If a respondent's answer to a given question was brief, additional prompts would be provided.

The semi-structured interview guide went through several rounds of testing and revisions with members of the research team and advisory committee. Researchers conducting the interviews were cognizant of their role in the interview process and made efforts not to lead participants. Dunn (2016) provides an overview of the interview process that was followed for this research (p. 160 - 168).

Due to the phased approach for sending out survey questionnaire invitations, interviews also occurred in a more-or-less phased fashion with the bulk of interviews occurring between July 2022 and September 2022. Interviews lasted between 30 and 75 minutes and were conducted by two different members of the research team. As was mentioned previously, the study area initially focused on upper- and single-tier municipalities, and that data collection methods were extended to lower-tier municipalities at a later date. As a result of the shortened data collection window for lower-tier municipalities, semi-structured interviews were not conducted with lower-tier planning staff.

3.3.4.5 Secondary data

Secondary data identified for this project include three main sources:

1. Urban-rural classification,
2. MMAH Municipal Service Office regions; and
3. Municipality type and boundary data.

These secondary data sources were used to organize and assist with analysis of primary data (Phase 3). More specifically, these sources provide descriptive attributes about each

municipality which were used to aggregate data and look for patterns. Secondary data sources were identified in consultation with the advisory committee.

It should also be noted that a variety of municipal documents including webpages, policies, strategies, and reports, in addition to online news publications, were reviewed throughout the duration of this project. These additional documents provide important contextual information and allow for a deeper understanding of some of the topics that were raised during interviews and/or survey data collection. While document review was not identified as a formal research method it played an important role in providing insight to key issues and areas for future inquiry.

Urban-rural classification data for municipalities

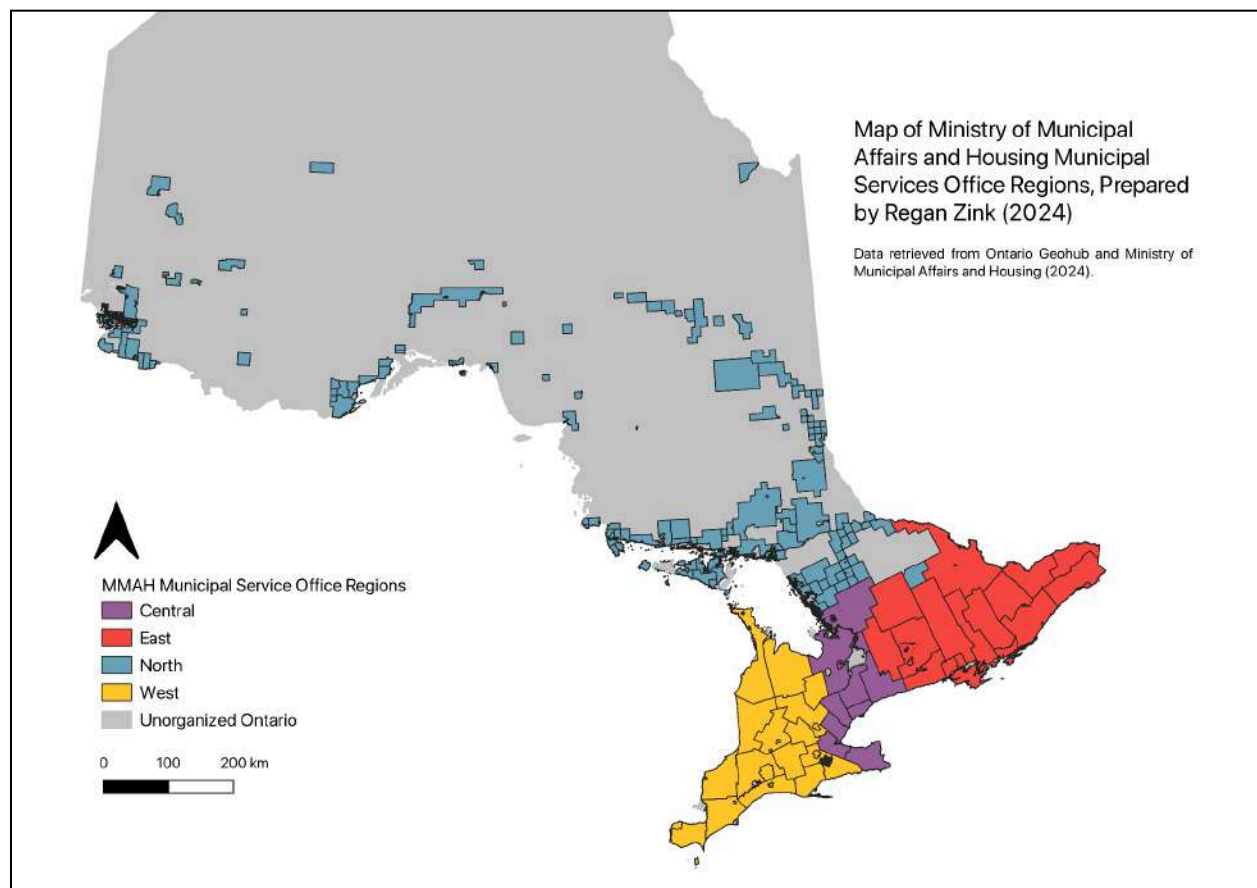
As was discussed in Chapter 2, there is ongoing debate about what constitutes urban and rural (Cloke, 2006; Delgado-Viñas & Gómez-Moreno, 2022; Halfacree, 1993, 2009; Hoggart, 1990; Nelson et al., 2021; Sharp & Clark, 2008). It is widely recognized that “rural” is a social construct and as a result there is no one definition or metric for what is considered rural. That being said, distinguishing between urban and rural has important implications for policy and program development across all levels of government and is helpful in the context of data collection and analysis (Lichter & Ziliak, 2017; Nelson et al., 2021; ROI, 2023).

This research uses a modified version of the Statistics Canada Statistical Area Classification of census subdivisions, whereby any municipality within a Census Metropolitan Areas (CMA) is considered “urban” and any municipality outside of a census metropolitan area is considered “rural” (OMAFRA, 2023; ROI, n.d., 2023; Statistics Canada, 2023). Census subdivisions generally match lower- and single-tier municipal boundaries (with a few exceptions). For upper-tier municipalities, which cover a much larger geography, the upper-tier is classified “urban” if at least one of the lower-tier municipalities within its boundaries is classified as urban. This approach is used by the Rural Ontario Institute (n.d., 2023) and Ontario Ministry of Agriculture, Food and Rural Affairs (2023).

MMAH Municipal Service Office regions

In addition to identifying if a municipality was considered urban or rural, it also became apparent that grouping municipalities by geographic region in Ontario would be useful for data analysis. There are a number of ways that municipalities in Ontario are divided into geographic regions and it seems that each Provincial Ministry has a slightly different version. For this research the [MMAH Municipal Service Office regions](#) have been used to categorize municipalities into four groups - western, central, eastern and northern Ontario (MMAH, 2019). Figure 3.2 depicts the MMAH Municipal Service Office regions.

Figure 3.2 - Map showing MMAH Municipal Service Office regions and geographic coverage of municipalities in Ontario



The MMAH Municipal Service Office regions were selected for this research for three reasons:

1. The research questions and objectives related to the capacity of municipal governments and MMAH is the Provincial Ministry responsible for municipal affairs including land use planning and municipal administration;
2. All Districts were considered to be part of northern Ontario (this is important because Districts operate differently than upper-tier municipalities); and
3. Correspondence with MMAH suggested that MMAH Municipal Service Office regions are in "general alignment with common understandings of central, eastern, western and northern Ontario" (H. Collins, personal communication, February 9, 2024).

It was noted by H. Collins (personal communication, February 9, 2024) that the locations and service areas of MMAH's Municipal Services Offices have generally been stable since their current configuration was established in the late 1980s/early 90s. During the early 2000s there was a cross-government effort to align regional office boundaries across all ministries, but this was never realized as different ministries have different needs and catchment areas for their services (ibid).

Municipality type and boundary data

The final group of descriptor data used for this research project includes municipality type (i.e., is the municipality an upper, lower, or single-tier) and geospatial boundary data (including municipal ID Number). Two datasets from Ontario GeoHub were used:

1. [Municipal Boundary - Upper Tier and District](#) (MMAH, 2012a), and
2. [Municipal Boundary - Lower and Single Tier](#) (MMAH, 2012b).

The Association of Municipalities of Ontario (AMO) data was used to validate the lower-tier municipalities within each upper-tier municipality (AMO, n.d.).

3.3.5 Phase 3 - Data analysis

In Phase 3 of the research primary and secondary data were cleaned and then integrated as part of the data analysis process which included thematic analysis, data visualization, and

statistical analysis. Following the convergent mixed methods research design outlined in Figure 3.1 qualitative and quantitative data analysis were carried out in parallel and integrated to produce a more complete, nuanced understanding of municipal agri-food system planning capacity.

3.3.5.1 Approach

Convergent mixed method research designs required the integrated analysis of quantitative and qualitative data (Fetters et al., 2013). This process presents a number of challenges as the processes, procedures, and best practices for quantitative and qualitative data analysis are different. This research project uses side-by-side comparison as discussed by Creswell and Creswell (2018). Side-by-side comparison involves reporting the analysis of each type of data separately and then discussing how the findings relate to one another (e.g. do they confirm or contradict one another) (Creswell & Creswell, 2018). Chapters 4 through 6 discuss the results of this research, including the findings of both the qualitative and quantitative analysis.

3.3.5.2 Data cleaning

Before analysis could commence the primary and secondary data needed to be cleaned and prepared for analysis. Data cleaning is the process of preparing, transcribing, standardizing, relabeling, correcting, integrating, and organizing data so that data analysis can be carried out in a straightforward and meaningful way (Costanzo, 2024). The nature and extent of data cleaning involved for a given project depends on the type of data collected and the desired data analysis methodology (Carlisle-Johnston et al., 2024; Osborne, 2013).

Survey questionnaire - quantitative and qualitative data cleaning

The raw data collected through the elected official survey questionnaire and the planner survey questionnaire were exported from Qualtrics as comma-separated values (CSV) files (one file for each survey). These CSV files included all response data from the surveys, including both quantitative (closed questions) and qualitative (open and combination questions). Both CSV files were opened in Excel to clean the data - including standardizing responses (e.g., the names of municipalities), re-coding variables (e.g., bucketing numeric data), correcting typos, and

removing duplicate responses. For the elected official survey all elected officials were invited to participate and as a result some municipalities were represented by more than one survey response. For the planner survey only the most senior planner (or similar) was invited to participate, when more than one survey response was received for a given municipality only the response from most senior planning staff (e.g., planning director) was retained. It should also be noted that planning board staff responses to the planner survey were not retained for quantitative analysis as their structure and geographic coverage is significantly different than that of a municipality.

At this stage, secondary data was integrated with the survey responses so that the MMAH Municipal Service Office regions, urban-rural classification, and municipality type and boundary data was identified for each response. The secondary data acts as attribute data (or variables) for each response. The resulting CSV file was used to prepare data visualization using Excel, statistical analysis using R (and RStudio), and thematic analysis using Dedoose. For the statistical analysis, the quantitative survey data csv file was imported in R (R Studio) and each variable type was defined (e.g., ordinal, numerical, nominal).

Semi-structured interview - qualitative data cleaning

All semi-structured interview transcripts (generated by Otter.ai) were validated by a member of the research team by relistening to the audio recording while reading the transcript (Braun & Clarke, 2013). Any salient errors that were identified in the transcript were manually corrected. Each transcript was then downloaded as a Microsoft Word document file (DOCX) and imported into Dedoose for analysis. The survey response data (CSV) and secondary data (CSV) were also imported into Dedoose and linked to each transcript as descriptor/attribute data. It should be noted that direct quotes from respondents that have been included in this report have been cleaned and edited for clarity and readability.

3.3.5.3 Qualitative analysis

Qualitative survey data, including data from the elected official survey questionnaire and planner survey questionnaire, as well as data collected through the semi-structured interviews,

were analyzed using thematic analysis. All qualitative data analysis for this research was prepared using Dedoose. Secondary data and closed survey questions were joined to each transcript (and associated codes) and used to help analyze the data and identify patterns.

Thematic analysis

Thematic analysis for this research was prepared using Dedoose. Thematic analysis is a researcher driven, interpretive approach to analysis that looks to identify, analyze and construct themes (patterns) across data sources (Braun et al., 2018; Braun & Clarke, 2019; Terry & Hayfield, 2021). Thematic analysis is “viewed as a rigorous, powerful, and yet “straight forward” way of engaging with qualitative data” (Terry & Hayfield, 2021, p. 3). Advantages of thematic analysis include its theoretical flexibility, usefulness to synthesize and summarize large amounts of qualitative data, easy to communicate findings, and suitability for producing analysis to inform policy development (Braun & Clarke, 2006; Terry & Hayfield, 2021). This research employs a hybrid between “reflexive” thematic analysis and a “codebook” approach identified by Braun et al. (2018).

Reflexive thematic analysis was first described by Braun & Clarke in 2006 (although the term “reflexive” was not introduced by the authors until 2018) and looks to identify themes - which are understood to be “multi-faceted, conceptual, meaning-based patterns” (Terry & Hayfield, 2021, p. 4). Braun and Clarke (2019) explain that “themes are creative and interpretive stories about the data, produced at the intersection of the researcher’s theoretical assumptions, their analytic resources and skill, and the data themselves.” (p. 594). Reflexive thematic analysis emphasizes the emergent and iterative nature of coding and theme development, and does not employ predetermined themes. The six-phase guide to reflexive thematic analysis developed by Braun and Clarke (2006) include: (1) Familiarizing yourself with your data; (2) Generating initial codes; (3) Generating ‘initial’ themes (as modified by Braun & Clarke, 2019); (4) Reviewing themes; (5) Defining and naming themes; (6) Producing the report. Reflexive thematic analysis is rooted in qualitative research practice.

In contrast to reflexive thematic analysis, codebook thematic analysis takes a more structured and systematic approach to identify a set list of codes (also referred to as themes, domains,

topics, or “buckets”) early in the analysis process (Braun et al., 2018; Braun & Clarke, 2019; Guest et al., 2012). Codebook thematic analysis places an emphasis on rigor and consistent application of codes (Terry & Wakefield, 2021). Codebook thematic analysis results in a final report where “domain summaries” are “organised around a shared topic but not shared meaning” (Braun & Clarke, 2019, p. 593). In this context, a domain summary could be understood as a summary of what participants said related to a specific topic or issue as opposed to the identification of a “meaning-based pattern” (as would be identified through reflexive thematic analysis) (Braun et al., 2018, p. 845). Codebook thematic analysis is more closely associated with quantitative research practice.

For this research a hybrid approach to thematic analysis meant that some codes were developed early on and were informed by existing concepts or theories, and other codes emerged from the data throughout the analysis process. More specifically, once the researchers were familiar with the qualitative data (including interview transcripts and qualitative survey responses) the first round of coding applied included codes that were previously identified through the pilot study (see Caldwell et al., 2020 & Caldwell et al. 2021) and codes that identified responses to specific data collection questions. Once these initial codes were applied, additional ‘draft’ codes were added to keep track of potential patterns and themes that emerged from the data that were not initially anticipated. This was followed by several rounds of more detailed and focused coding and theme identification that moved the analysis from draft to a more finalized stage (Saldaña, 2021).

Coding was viewed as an iterative process and in some cases involved breaking a code into two more sub-codes, and in other cases codes amalgamating upon reflection were more related than was initially thought (Saldaña, 2013). Throughout this process codes were clustered (through multiple iterations) into coherent themes either united by shared meaning (reflexive thematic analysis) or shared topic (codebook thematic analysis). Both inductive (or bottom-up) and deductive (or top-down or theoretical) approaches to coding and theme development were employed (Boyatzis, 1998; Braun et al., 2018; Braun & Clarke, 2006, 2019; Terry & Hayfield,

2021; Saldaña, 2021). Furthermore, consideration was given for both semantic (explicit) and latent (implicit) analysis and code types (Braun et al., 2018).

While it is generally recognized that there is not a right and a wrong way to conduct thematic analysis, quality is important to both coding and theme development (Terry et al., 2017). For this research quality-assurance strategies focused on thorough engagement with the data, sharing and discussion amongst the research team and advisory committee, reflection and journaling, and the cyclical processes of reviewing and re-coding the data (Saldaña, 2021). Using a hybrid between a reflexive and codebook thematic analysis approach allowed the research team to build on themes that were previously identified through the pilot study, explore new themes that emerged from the data, and provide summaries of specific data collection questions. This approach to thematic analysis reflects the research questions and objectives, methodological paradigm, and mixed methods research design.

3.3.5.4 Quantitative analysis: Data visualization and statistical analysis

Quantitative survey data from both the elected official survey questionnaire and planner survey questionnaire were analyzed using data visualization, Pearson's chi-square test and original logistic regression. All quantitative data analysis for this research was prepared using Microsoft Excel, R (RStudio), and QGIS. Closed questions from both surveys provided response variables that were analyzed using attribute variables (secondary data) to make comparisons between respondent groups, municipality types, and geographic areas in Ontario (MMAH Municipal Service Office regions).

Data visualization

Data visualizations are an approach to quantitative data analysis where quantitative data is organized and represented visually to help identify patterns and insights (Ismay & Kim, 2024; Schwabish, 2021; Tufte, 2001; Wilke, 2019). Examples of data visualizations include cross tabulations, summary tables, charts, graphs, and spatial distributions of data (e.g., maps). Data visualizations are an important part of quantitative analysis and help us gain insights we would not have been able to by looking at the raw data alone. Furthermore, data visualizations are an

important tool for communicating research results and findings to a broader audience (Healy, 2019).

Statistical analysis: Pearson's chi-square test and ordinal logistic regression

Statistical analysis for this research included Pearson's chi-square test (and Fisher's exact test) and ordinal logistic regression (specifically proportional odds logistic regression).

Pearson's chi-square test is a statistical independence test which examines the relationship between two categorical variables (Döring, 2018; Turhan, 2020). More specifically Pearson's chi-square test "allows us to assess whether two categorical variables are associated beyond what would be expected on the basis of chance variation alone" (Palys & Atchison, 2008, p. 348). This test was used to determine the relationship between categorical response variables (survey data) and categorical attribute variables (secondary data). Pearson's chi-square test has a number of assumptions that must be met, including 1) the data are a random sample, 2) the variables are original or nominal, 3) the sample size is sufficient so when arranged in a contingency table there are adequate expected cell counts, and 4) the data are independent (Hess & Hess, 2017; Turhan, 2020). Pearson's chi-square test works best when the number of individuals/units in each cell of the contingency table is greater than 5 (Hess & Hess, 2017). In cases where this was not true, Fisher's exact test was used to confirm if the p value was significant (Döring, 2018; Hess & Hess, 2017).

Beyond wanting to know if two categorical variables were associated, there were also cases where the nature of that relationship was of interest to the research. In these cases, ordinal logistic regression (specifically proportional odds logistic regression) was used to investigate how and to what degree two categorical variables were associated (Agresti, 2010, 2013; Harrell, 2015). Ordinal logistic regression is a model which predicts an ordinal dependent variable given one or more independent variables (McNulty, 2021).

For example, Pearson's chi-square test can be used to understand if different planners from different municipality types (e.g., upper, lower, and single-tier) self-reported levels of capacity related to agri-food systems planning (e.g., limited, some, adequate) than would be expected by

chance variation alone. In the case where the relationship between (variable 1) municipality type and (variable 2) self-reported different levels of capacity related to agri-food systems planning is significant, ordinal logistic regression would be used to further investigate that relationship (e.g., how and to what degree are municipality type and self-reported levels of capacity associated?).

3.3.5.5 A note on anonymizing data

It should be noted that all data in this report has been anonymized by aggregating data using various attribute variables, including respondent type, municipality type (e.g., upper, lower, and single-tier), MMAH Municipal Service Office regions, or urban-rural classification. Interview and qualitative survey data that are quoted throughout the report have been anonymized by MMAH Municipal Service Office regions (West, Central, East, North), municipality type (upper-tier (UT), lower-tier (LT), single-tier (ST)), and response type (elected official survey, planner survey, planner interview). This approach allows for sharing of some contextual information while protecting the identity of research participants.

3.4 Research assumptions and limitations

As with any research there are several assumptions and limitations that should be acknowledged. Significant effort was made to ensure data collection and analysis was conducted in a transparent, credible, and trustworthy way (Lincoln & Guba, 1985; Fàbregues & Molina-Azorín, 2017; Robinson, 2020; Teddlie & Tashakkori, 2009). Furthermore, the research team recognized the importance of high quality data in contributing to high quality findings and recommendations. In the context of quantitative research, data “quality” is assessed in terms of “validity” and “reliability”, and though similar concepts apply in qualitative research, the term “credibility” is more commonly used (Teddlie & Tashakkori, 2009, pp. 308-309). Section 3.4 discusses assumptions and limitations associated with this research and seeks to address concerns related to validity, reliability, and credibility throughout research design, data collection, and analysis.

3.4.1 Assumptions

This research builds off existing research and discourse related to agri-food systems planning and planning capacity. At a macro level, this research acknowledges that the world is facing a number of unprecedented changes and challenges and in this context agri-food systems have been criticized for being unsustainable (Clapp & Moseley, 2020; FAO, 2021; Held, 2023; IPCC, 2023; Yasmeen, 2023). While there is consensus that current agri-food systems are not sustainable, there are divergent opinions related to what change is needed, at what scale, and which actors should lead this change (Brock, 2023). This research builds upon discourse which argues that local and regional agri-food systems have an important role in transitioning to more sustainable agri-food systems (Blay-Palmer et al., 2016; Clapp & Moseley, 2020; Knezevic et al., 2017; Soma & Wakefield, 2011; Sumner, 2012) and that the planning profession has a role to play (Buchan et al., 2015; Hansen et al., 2020, 2021; Lang, 2014; Raja et al., 2008). This research assumes that the planning profession can and should contribute to supporting sustainable local and regional agri-food systems.

The assumption that the planning profession can and should contribute to supporting sustainable local and regional agri-food systems is relevant to both urban and rural municipalities. This research was informed by the belief that there are important synergies that can be drawn by looking across urban and rural spaces and places when looking to understand and address agri-food system challenges (Hoggart, 1990; Bell, 2007; Shellabarger et al., 2019). This is evident in the study area including all municipalities in Ontario, including urban, rural and regional municipalities.

This research also leverages discourse that recognizes the role of planning capacity in contributing to environmental planning objectives (Brody et al., 2006; Brody et al., 2010; Filion et al., 2004, 2020; Göçmen & LaGro, 2016; Hawkins, 2014; Kim & Li, 2016; Lee, 2018; Norton et al., 2018; Tang, 2008; Tang et al., 2009). More specifically, this research is a continued exploration of municipal agri-food systems planning capacity which was first explored by Caldwell et al. in 2020 and argues that “a thriving agricultural industry depends on the knowledge and support provided by municipal governments” (p. 7). The belief being that

municipal staff and councils ought to be equipped with the capacity (expertise, resources) needed to undertake municipal agri-food systems planning work (Caldwell et al., 2020, 2021; Zink et al., 2022). Inherent to this research is the assumption that municipalities have varied municipal agri-food systems planning capacity and that varied capacity has implications for agri-food systems planning.

Beyond a number of assumptions relevant to the research topic, questions, and objectives, this research is also informed by several assumptions relevant to the research methodology. This research was informed by a mixed methods methodological paradigm (Creswell & Creswell, 2018; Creswell, 2015; Johnson et al., 2007; Tashakkori & Creswell, 2007). This paradigm is grounded in pragmatism (Cherryholmes, 1992; Johnson & Onwuegbuzie, 2004; Hall, 2013), and employed a convergent mixed-methods research approach (Creswell & Creswell, 2018). In this context, it was understood that quantitative and qualitative research methods could be selected and combined based on their ability to address the research questions and objectives.

3.4.2 Limitations

This research faced several potential limitations that should be acknowledged as part of documenting the research approach and methods. For the purpose of this chapter, the limitations have been organized into five groups, including: research approach, research biases, timing of the research, the use of technology, and project funding and the research team.

3.4.2.1 Research approach

The first group of limitations is associated with mixed methods research. These limitations were discussed earlier in this chapter and include: 1) increased time and cost demands of working with multiple types of data; 2) challenges associated with combining quantitative and qualitative data, including conflicting results; and 3) increased complexity, logistics, and expertise required to work with diverse methods (Creswell & Creswell, 2018; Johnson & Onwuegbuzie, 2004; Migiro & Magangi, 2011; Maxwell et al., 2015). Within the context of this research, the identified research topic(s) and associated research questions and objectives are incredibly complex and nuanced. Compounding this complexity is the large study area identified

for this research and the variable structure of municipal government in Ontario. Morgan (2018) draws on Sandelowski (2014), and brings attention to the role of judgment in mixed methods research, “Without consensual standards within a field, we cannot say when the use of a method was strong or weak, appropriate or inappropriate” (p. 8). Contributions from the advisory committee helped to address these limitations including refining the research questions and objectives, developing the research design, and testing the data collection tools. It is also important to note that this research approach builds off of the pilot study completed in 2020 looking at a more limited area of Ontario (Caldwell et al., 2020, 2021).

3.4.2.2 Research biases

There are some biases that are inherent to both survey questionnaires and semi-structured interview data collection methods which may contribute to inconsistent data collection. These biases include: sampling bias, response bias, interviewer bias, and confirmation bias.

Sampling bias is concerned with who participated in the research. Both survey questionnaires and semi-structured interviews rely on the willingness of participants. Since participating in this research was an extra demand in addition to the typical workload of participants, one potential cause for non-response could be lack of capacity within a municipality. This non-response bias could lead to an overestimation of capacity across municipalities. Similarly, respondents with more demands on their time may have moved through the survey more quickly, and provided shorter, less detailed responses. Conversely, in municipalities with higher capacity, respondents may have felt more able to participate. It is also possible that those who participated in the research had prior interest in agriculture and agri-food systems planning. To address this limitation participants were sent multiple reminders to increase response rates.

Response bias is concerned with the validity or accuracy of response data collected. With both the survey questionnaire and semi-structured interview there is the risk that participants provided responses based on what they thought the researchers were looking for or what they considered socially acceptable. It also is likely that there was some variation in how the survey questions were understood and the information collected would reflect that. In an effort to

reduce response bias, data collection tools went through several rounds of testing with members of the research team and advisory committee.

Interviewer bias is concerned with the role of the interviewer in influencing the response of the interviewee. The semi-structured interviews presented opportunities for the interviewer to take on more of a knowledge sharing role (e.g., to explain concepts, approaches and ideas related to agri-food systems planning in Ontario). In this context, it is possible that the researcher's commentary may have unintentionally influenced how respondents replied. To minimize the impact of interviewer bias, the research team, specifically those involved in conducting interviews, met regularly to discuss approach, challenges, and themes that arose through the interview process.

Confirmation bias is concerned with the tendency for researchers to accept or value responses/data that align with preconceived beliefs and assumptions. This type of bias had the potential to impact both the semi-structured interviews and analysis processes. For example, during the interview the interviewer may be more likely to follow up on points of discussion that more closely align with their beliefs, understandings, and conceptualizations of municipal agri-food systems planning capacity. Similar can be said, for the analysis process where information that is contrary to the evolving thematic analysis may be dismissed or disregarded. Strategies to mitigate the impact of confirmation bias included thorough and iterative engagement with the data, sharing and discussion amongst the research team and advisory committee, and regular reflection and journaling throughout the research process (Saldaña, 2021).

3.4.2.3 Timing of the research

Data for this research was collected in 2022 and 2023, with the majority of data collection occurring between June 2022 and October 2022. The time period of data collection was in part informed by the municipal election which took place in Ontario on October 24, 2022 and the Provincial election which took place on June 2, 2022. While some of the information presented in this report, such as specific examples or challenges reported by respondents, will become

dated with the passing of time, many of the overarching concepts and ideas presented are more timeless and contribute to ongoing discourse regarding municipal agri-food systems planning capacity more broadly.

It is important to note that when data was collected for this research, all municipal governments had a role in administering land use planning in Ontario. As of July 1, 2024 the Government of Ontario removed planning policy and approval responsibilities from three upper-tier municipalities including Peel Region, York Region, and Halton Region. In the first half of 2025, planning policy and approval responsibilities were removed from the Region of Waterloo, Region of Durham, and Niagara Region. Simcoe County is identified to lose their planning authority later in 2025. These changes are associated with Bill 185, the Cutting Red Tape to Build More Homes Act, 2024 and Bill 23, the More Homes Built Faster Act, 2022 and have fundamental implications for how land use planning is administered in the impacted regions. This research documents municipal agri-food systems planning capacity prior to the removal of planning responsibilities in these regions and provides insights and reflections for areas where upper-tier planning responsibilities are maintained.

Beyond the changes to upper-tier planning authority, land use planning in Ontario is experiencing an unprecedented period of change. The Progressive Conservative Government, under leadership of Premier Doug Ford, has facilitated a number of changes to land use planning policy and processes which collectively have created turbulence. These changes include multiple amendments to the Planning Act and associated regulations (as well as other planning adjacent legislation), the repeal of A Place to Grow: Growth Plan for the Greater Golden Horseshoe, the release of two new Provincial Policy Statements (2020 and 2024 - now referred to as the Provincial Planning Statement), and increasing involvement from the Provincial Government in local land use planning matters, among other things. At the same time, the planning profession is experiencing a shortage of planners. Combined, these factors mean that municipal planners are experiencing increased pressures and workloads. Municipal planning staff and elected officials indicated in 2022 that resourcing constraints, workload, and morale were barriers to their participation in this research.

The last note about timing of this research is related to impacts of COVID-19. In Ontario, the majority of mask and vaccination mandates were lifted in early 2022. That being said, there was still a general sense of caution and preference for virtual meetings. As a result the majority of data collection was conducted virtually (with the exception of a few interviews which took place in the latter half of 2022).

3.4.2.4 The use of technology

As was previously mentioned, the majority of data collection for this research occurred virtually and relied on the comfort level of participants with selected technologies (including, Qualtrics, Zoom, and Calendly). This decision was in part informed by COVID-19 restrictions and the preference to limit non-essential in-person contact. Virtual data collection methods also enabled a greater reach and coverage of the study area as interviews with participants from multiple parts of the Province of Ontario could be scheduled on the same day. In addition to virtual data collection methods, the majority of data analysis was also completed with the support of computer programs (with the exception of journaling which was written by hand). Comfort level of the research team with each technology differed based on previous experience using the program and whether or not it was supported by the University of Guelph Library staff (who were regularly consulted throughout the duration of this project). A complete list of the technology used in this research is included below:

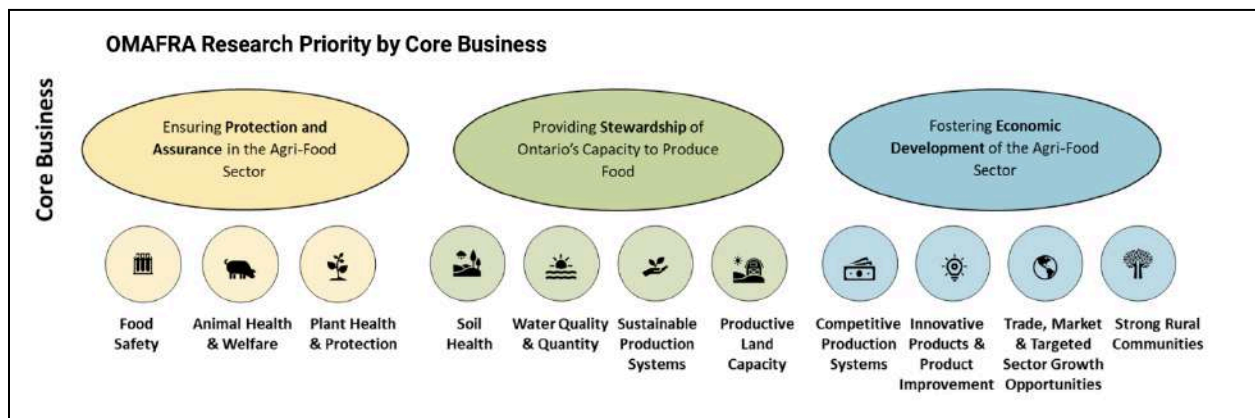
- MS Outlook (email invitations)
- Qualtrics (online survey platform)
- Calendly (meeting scheduling platform)
- Zoom (online interviews)
- Otter.ai (interview transcriptions and cleaning)
- MS Excel (survey data cleaning and data visualization)
- Dedoose (qualitative coding)

- R and RStudio (statistical analysis)
- QGIS (spatial analysis)

3.4.2.5 Project funding and the research team

The final group of limitations for this project relate to the project funding and research team (including personnel involved in the research project). As was mentioned previously, this research was partially funded by the Ontario Agri-Food Innovation Alliance Research Program (The Alliance). The Alliance is a partnership between OMAFA and the University of Guelph which funds research that aligns with OMAFA's priorities to ensure protection and risk resilience of the agri-food sector, provide environmental stewardship of Ontario's capacity to produce food, and foster productivity and growth in the agri-food sector (OMAFRA, 2020b). Figure 3.3 depicts OMAFRA's research priorities as identified in the 2020 call for research.

Figure 3.3 - Graphic summarizing the Ontario Agri-Food Innovation Alliance Research Program research priorities (OMAFRA, 2020b)



As with any project that is funded by public dollars, this research adhered to an agreement that was signed by the research team upon being awarded the project. The Award Agreement contains stipulations related to the project objectives and deliverables, timelines, budget, and reporting and data management requirements.

In addition to the requirements laid out in the Award Agreement, the research team itself introduced several limitations. The study schedule of the lead researcher, as well as other

research team members, introduced additional constraints around timing and availability. All members of the research team worked on this project in a part-time capacity.

It should also be acknowledged that each member of the research team brought with them their own positionality - including identity, life experiences, worldview, and relationship to the research topic (Holmes, 2020; Robinson & Wilson, 2022). These perspectives and experiences shaped the research, including approach, research design, selected methods, and analysis. In an effort to acknowledge and leverage the role of positionality in this project, the research team met on a regular basis to discuss observations, reflections, previous experiences, progress, and next steps. It should also be noted that both the principal investigator and lead researcher were involved in the 2020 pilot study. This experience greatly shaped and informed the research process for this project.

3.5 Summary of Chapter 3

Chapter 3 provides a detailed overview of the Research Methodology for this doctoral research. More specifically this chapter outlines the relevant methodological paradigm, methods of data collection, data analysis, and research limitations. At a high level, this research is interested in municipal agri-food systems planning capacity across Ontario and looks to address an existing gap in the literature.

While there is well established interest in agri-food systems planning, it is less clear what capacity is needed to undertake this work (Caldwell et al., 2020, 2021a, 2021b; Soma & Wakefield, 2011; Zink et al., 2022). This research looks to address this gap by exploring municipal agri-food systems planning capacity in Ontario. More specifically this research looks to address four research questions:

1. How can municipal agri-food systems planning capacity be conceptualized?
2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?

- 2.1. What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?
 - 2.2. Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?
 - 2.3. How does municipal agri-food systems planning capacity vary across the province?
3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?
4. What best practices and resources would strengthen municipal agri-food systems planning capacity?

The goal of this research is to better understand municipal agri-food systems planning capacity in Ontario and to better position municipal planning departments to respond to and support local and regional agri-food systems. This goal will be achieved through the following five objectives:

1. Develop a conceptual framework for municipal agri-food systems planning capacity in Ontario.
2. Investigate the capacity of municipal planning departments to respond to and support agri-food systems in Ontario.
3. Evaluate the capacity of municipalities to implement Ontario's agri-food systems land use policies (including Minimum Distance Separation (MDS), agricultural impact assessments, agricultural systems approach, and the Farming and Food Production Protection Act).
4. Explore how municipal agri-food systems planning capacity is supporting local and regional agri-food systems actors, interactions, and functions.

5. Identify strategies to strengthen municipal agri-food systems planning capacity in Ontario.

This research relies on a variety of methods to address the research questions and objectives in a holistic and pragmatic manner. Phase 1 of the research included a literature review of agri-food systems planning and capacity (as it relates to municipal planning). Phase 2 and Phase 3 of the research design follow a convergent mixed methods approach. The second phase is focused on primary data collection including both survey questionnaires and semi-structured interview data (with municipal planning staff and elected officials), as well as the identification of secondary data sources (including urban-rural classification, MMAH Municipal Service Office regions, and municipal type and boundary data). In the third phase, primary and secondary data was integrated as part of the data analysis process which included thematic analysis, data visualization, and statistical analysis.

This research is underpinned by a mixed methods methodological paradigm (Creswell & Creswell, 2018; Creswell, 2015; Johnson et al., 2007; Tashakkori & Creswell, 2007), is grounded in pragmatism (Cherryholmes, 1992; Johnson & Onwuegbuzie, 2004; Hall, 2013), and employed a convergent mixed-methods research approach (Creswell & Creswell, 2018). Using a mixed-methods research design allowed for the collection and examination of both quantitative and qualitative aspects of municipal agri-food systems planning capacity. Furthermore, this approach enabled the collection of high-level data through online questionnaires from as many municipalities as possible across the province, which is supplemented by more in-depth and nuanced data through semi-structured interviews.

There are several assumptions and limitations associated with this research. This research is premised on the idea that the planning profession can and should contribute to supporting sustainable local and regional agri-food systems. Furthermore, this research builds off of a growing body of literature that recognizes the role of planning capacity in contributing to environmental planning objectives. Limitations discussed in this chapter were organized into five groups, including: research approach, research biases, timing of the research, the use of technology, and project funding and the research team. The following chapters discuss research

findings including who participated in the research, insights regarding municipal agri-food systems planning capacity in Ontario, municipal initiatives to support agri-food systems, and best practices and resources to strengthen municipal agri-food systems planning capacity.

Chapter 4: Exploring Municipal Agri-food Systems Planning Capacity

4.1 Purpose of Chapter 4

Chapter 4 is the first of three results chapters. More specifically this chapter provides an introduction to the results of the primary data collection and focuses on Research Question 2: *Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?* This research question is further explored through three sub-questions:

- *What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?*
- *Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?*
- *How does municipal agri-food systems planning capacity vary across the province?*

This chapter begins by providing an overview of who participated in the research (Section 4.2), followed by a discussion of contextual understandings of agri-food systems (Section 4.3) and contemporary agri-food systems challenges as discussed by the research participants (Section 4.4). The remainder of the chapter focuses on factors impacting municipal agri-food systems planning capacity (Section 4.5), the ability of municipalities to implement Ontario's agri-food systems land use policies (Section 4.6), and an exploration of self-reported municipal agri-food systems planning capacity across the province (Section 4.7).

4.2 Who participated

Section 4.2 outlines participation in this research through three primary data collection methods: the elected official survey, the planner survey, and semi-structured interviews with planners. All 444 municipalities, in addition to planning boards, were considered through the research process and invited to participate. Table 4.1 summarizes the number of municipalities in Ontario by municipality type. The single-tier southern (ST-S) category includes all single-tier municipalities in southern Ontario, covering the West, Central, and East MMAH Municipal

Service Office regions, while the single-tier northern (ST-N) category includes those in northern Ontario (North MMAH Municipal Service Office region).

Table 4.1 - Number of Municipalities in Ontario				
Upper-tier (UT)	Lower-tier (LT)	Single-tier Southern (ST-S)	Single-tier Northern (ST-N)	Total
30	241	29	144	444

4.2.1 Participation by municipality type

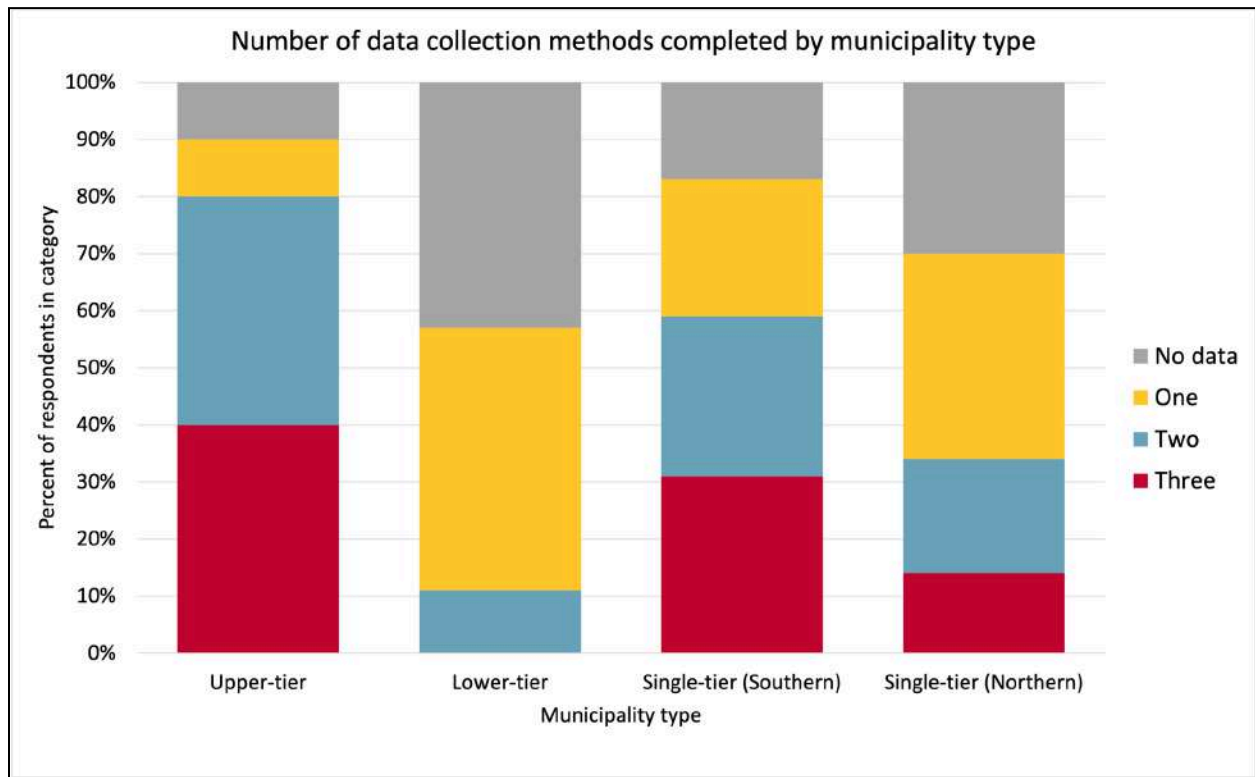
Data collection efforts for this project yielded 196 planner surveys, 230 elected official surveys, and 68 interview transcripts. A total of 290 municipalities participated in this research through at least one of the data collection methods, which is a participation rate of 65% based on municipalities as the target population. Among municipality types, upper-tier municipalities consistently had the highest participation rate with 90% of upper-tier municipalities participating in at least one of the data collection methods. The participation rate for single-tier southern and single-tier northern, in at least one of the data collection methods, were 83% and 70% respectively. Lower-tier municipalities had the lowest participation rates, with only 57% of municipalities participating in at least one of the data collection methods. It should be noted that lower-tier municipalities were not initially included in the target population and as a result were only provided the opportunity to participate in two of the three data collection methods and were given a shorter data collection window. Table 4.2 provides a summary of the number of data collection methods completed by each municipality type. Similarly, Figure 4.1 depicts participation rates by each municipality type.

Several municipalities indicated they were not able to participate in this research due to resourcing and capacity constraints. For example, a respondent from eastern Ontario replied to the invitation to participate “Unfortunately due to the high number of requests received by the planning department I was not able to complete the survey on time, we do not have any other

resource in the planning department” (East, LT, Planner Survey). Respondents from across Ontario reported that high levels of work was impacting their ability to support activities beyond statutory requirements.

Table 4.2 - Number of data collection methods completed by each municipality type										
	Three data collection methods					Two data collection methods				
	ST - N*	ST - S [†]	UT	LT	Total	ST - N*	ST - S [†]	UT	LT	Total
Absolute Number of Municipalities	20	9	12	0	41	29	8	12	26	75
Response rate (as % of municipalities)	14%	31%	40%	0%	9%	20%	28%	40%	11%	17%
	One data collection method					No data				
	ST - N*	ST - S [†]	UT	LT	Total	ST - N*	ST - S [†]	UT	LT	Total
Absolute Number of Municipalities	52	7	3	112	174	43	5	3	103	154
Response rate (as % of municipalities)	36%	24%	10%	46%	39%	30%	17%	10%	43%	35%

Figure 4.1 - Number of data collection methods completed by municipality type



Participation in this research can also be understood in the context of each data collection method individually. Table 4.3 provides a summary of participation for each data collection method. Looking specifically at the planner survey, 185 municipalities participated, with the highest participation rates from upper-tier municipalities. Similarly, 185 municipalities participated in the elected official survey, with the highest participation rates from single-tier southern municipalities. For planner interviews, 68 interviews ranging from 30-75 minutes in length, captured the perspectives of 77 municipalities.

Table 4.3 - Summary of participation by data collection method														
	Planner Survey					Elected Official Survey					Planner Interview			
	ST - N	ST - S	UT	LT	Total	ST - N	ST - S	UT	LT	Total	ST - N*	ST - S	UT	Total
Absolute Number of Responses	61	19	29	87	196	85	30	21	94	230				
Number of Municipalities Represented	57	18	25	85	185	74	17	15	79	185				
Response rate (as % of municipalities)	40%	62%	83%	35%	42%	51%	59%	50%	33%	42%	27%	52%	77%	38%
	Note: Does not include municipalities represented by a planning board unless they submitted an individual response.										Note: Includes ST-N* municipalities represented by planning boards. Four Planning Boards participated in a planner interview.			

4.2.2 Geographic distribution of participation

It is also important to consider the geographic distribution of research participants. Figure 4.2 depicts participation rates by each MMAH Municipal Service Office region. Overall, participation rates across all four MMAH Municipal Service Office regions were similar. Northern Ontario had the highest participation rate, with 70% of municipalities completing at least one data collection method. In comparison, participation rates in western and central Ontario were 64%, while eastern Ontario had a slightly lower rate of 61%. The slightly lower participation rates in western, central, and eastern Ontario can be explained by the fact that these three regions include lower-tier municipalities (who were not invited to participate in a semi-structured interview and were given a shorter data collection window).

Participation in this research can also be visualized in a map format. Figure 4.3 depicts the number of data collection methods completed by each municipality across Ontario. Similarly, Figures 4.4 - 4.6 depict the participation of municipalities in the planner survey questionnaire, elected official survey questionnaire, and the semi-structured interview, respectively. These maps illustrate the geographic distribution of municipal participation across Ontario. Similar to the above commentary, these maps show high participation rates across the province. It should also be noted that these maps prioritize the participation of upper- and single-tier municipalities and only show participation for lower-tier municipalities in the case where the upper-tier municipality did not participate.

Figure 4.2 - Number of data collection methods completed MMAH Municipal Service Office regions

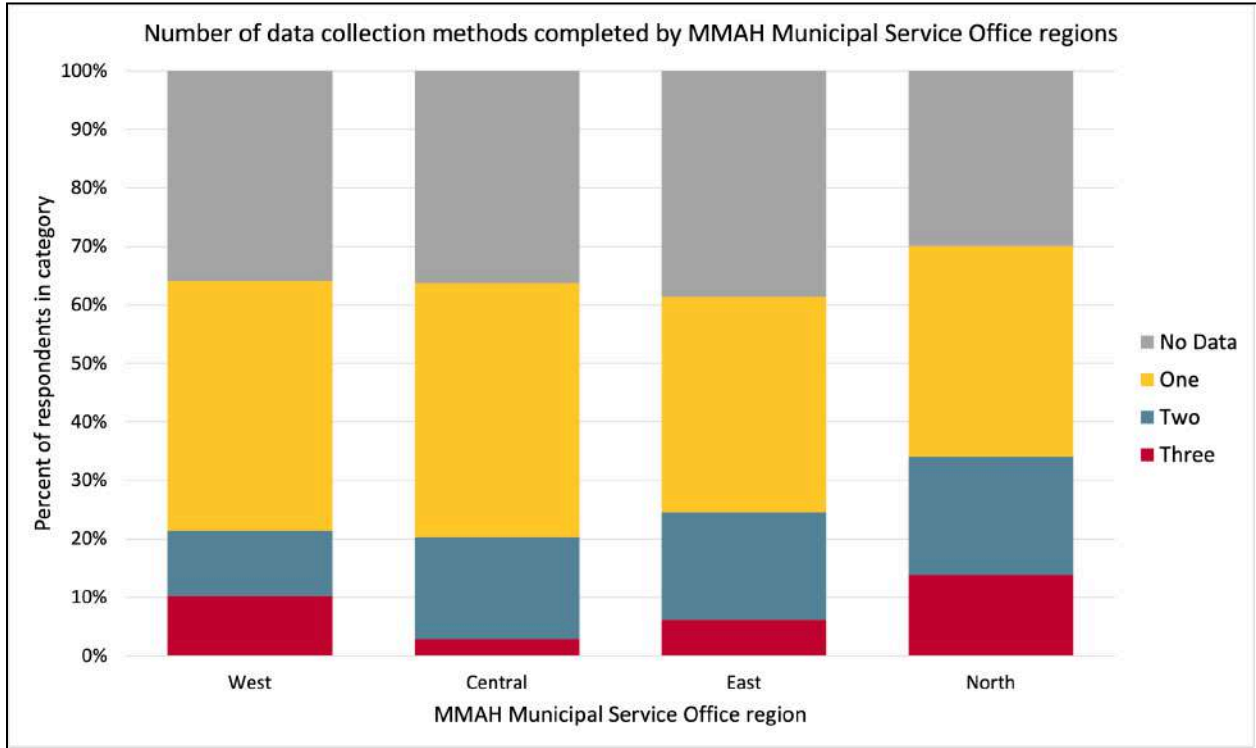


Figure 4.3 - Number of data collection methods completed by each municipality for upper- and single-tier, with lower-tier overlaid when the upper-tier did not participate

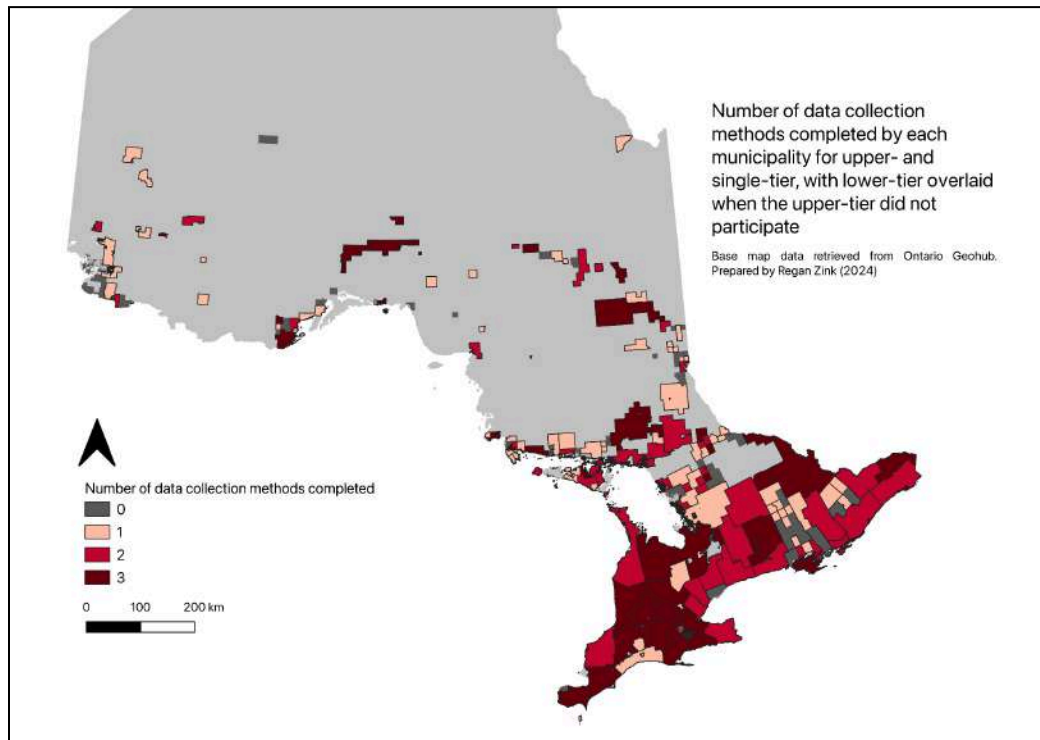


Figure 4.4 - Completed planner survey questionnaire for upper- and single-tier municipalities, with lower-tier overlaid when the upper-tier did not participate

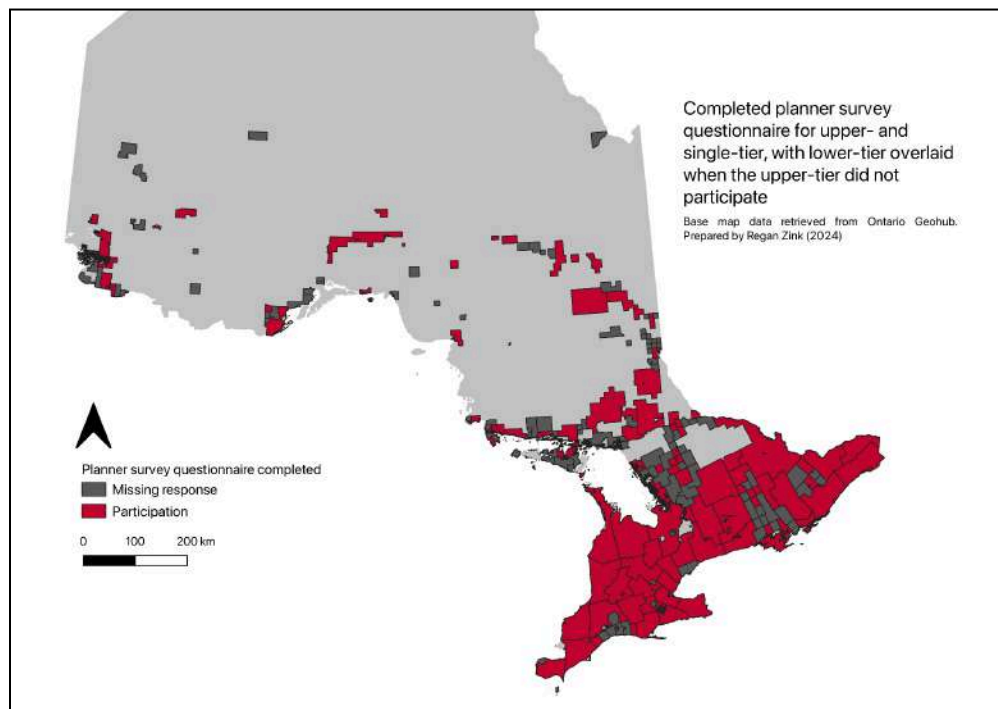


Figure 4.5 - Completed elected official survey questionnaire for upper- and single-tier municipalities, with lower-tier overlaid when the upper-tier did not participate

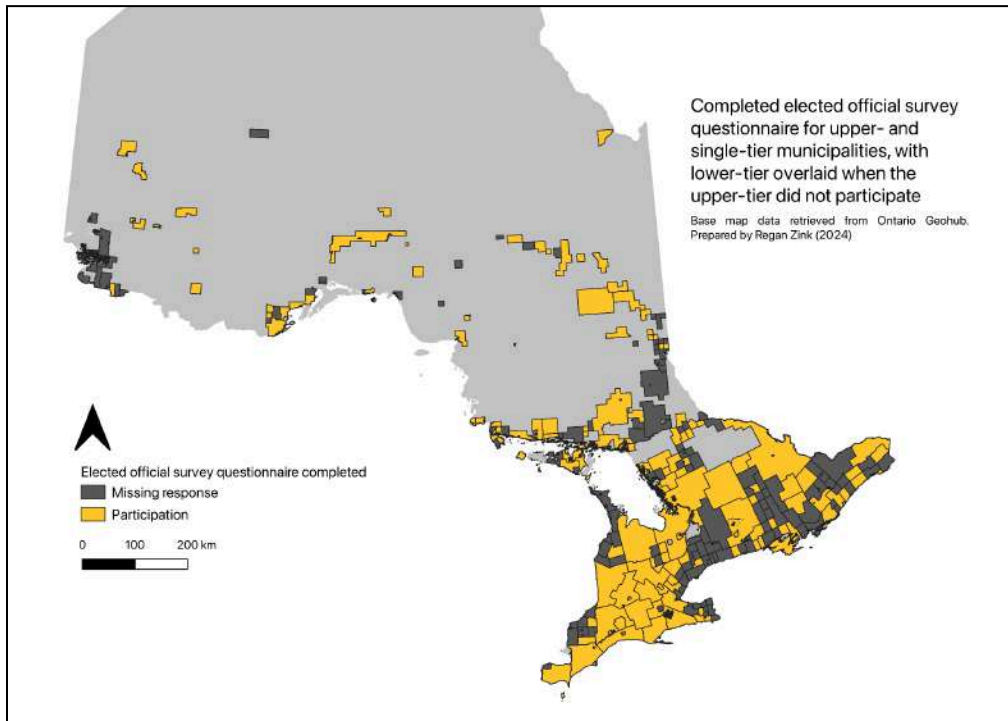
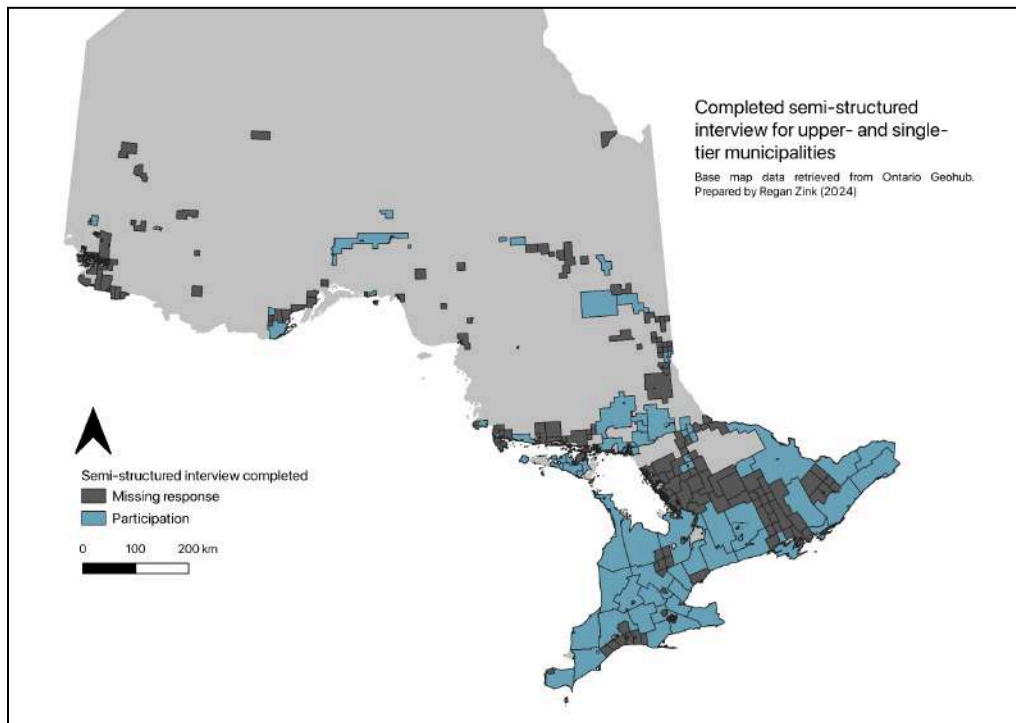


Figure 4.6 - Completed semi-structured interview for upper- and single-tier municipalities (lower-tier municipalities did not participate)



4.2.3 Research assumptions and limitations

When analyzing participation rates across the province and the collected data, several research assumptions and limitations must be considered. It is important to acknowledge that the sample for each method is different and that municipalities did not all complete the same number or types of data collection. The difference in sample size is most noticeable between the number of survey questionnaires collected and the number of semi-structured interviews conducted. 185 municipalities participated in both the planner and elected official survey questionnaires, while only 68 semi-structured interviews were conducted (representing the perspectives of 77 individual municipalities). Unequal sample sizes are common in convergent mixed-methods research, where data collection methods are carried out in tandem (Creswell & Creswell, 2018). For this research, survey questionnaires were used to collect broad, high-level data relevant to the research questions, while the semi-structured interviews were carried out to explore more nuanced, in-depth discussions. Furthermore, the research design for this project did not require that municipalities complete all three data collection methods.

In addition to different sample sizes between data collection methods, the sample size for the survey questionnaires also varies between questions. In both surveys most questions were optional, allowing respondents to submit their responses without completing every question. This choice was made to increase participation and provide flexibility in situations where a respondent did not wish to respond to a particular question (e.g., they were unsure of the answer or felt uncomfortable answering). For the most part, participation rates were high for all survey questions.

There were also some limitations associated with the collected semi-structured interview data, including technological and logistical challenges. In terms of technology, two of the interview recordings were poor quality and slightly muffled making small portions of the interview difficult to transcribe. In terms of logistics, two interviews were significantly shorter than the others and only addressed a portion of the semi-structured interview guide. Furthermore, there was one interview that combined staff from three different municipalities (at their request). Another important note about the semi-structured interview data is that lower-tier

municipalities did not participate through this data collection method and as a result all interview quotes included in this report come from single- and upper-tier planning staff.

It should also be noted that four Planning Boards participated in this research through both the planner survey questionnaire and semi-structured interview. Planning board staff responses to the planner survey questionnaire were not retained for quantitative analysis as their structure and geographic coverage is significantly different than that of a municipality. That being said, qualitative data collected from planning board staff was included in the qualitative data analysis. The Planning Boards that participated in this research include: Manitoulin Planning Board, East Sudbury Planning Board, Cochrane Planning Board, and Hearst Planning Board.

4.3 Contextual understandings of agri-food systems

Section 4.3 explores how respondents describe agri-food systems in their municipality, their perceived importance to local economies, and how frequently municipal staff and councils address agri-food system-related issues. Agri-food systems across Ontario are variable and this section seeks to understand some of the differences in how agri-food systems are perceived, valued, and interacted with by municipal planning staff and elected officials.

4.3.1 Description of local agri-food systems

One of the first questions in all three data collection methods was a general question about agriculture in the respondents municipality (e.g., “Describe the agricultural and agri-food activities that occur in your municipality.”). The purpose of this question was to get respondents thinking about agriculture and agri-food systems - including the geographic location, type and scale of agricultural activities (the agricultural land base); supporting infrastructure, services and assets important to the agri-food system (the agri-food network), and patterns and trends they had observed in relation to the agri-food system over the years. While this question did not explicitly look to assess or evaluate capacity related to municipal agri-food systems planning, it does provide important insight regarding the level of knowledge and commitment to agriculture expressed by respondents.

When asked to describe agriculture in their municipality, most respondents provide a list of primary agricultural activities and in some cases included commentary about other aspects of

agri-food systems, such as processing, on-farm diversified uses, markets, and community gardens and urban agriculture. For example, one elected official from western Ontario identified “agri-tourism including winery, farm tours, and agri-business; large food processors using local corn and potato crops; we are surrounded by prime agricultural land, harvesting cash crops and various livestock” (West, LT, Elected Official Survey). An elected official from northern Ontario listed “cash crop, beef cattle, dairy farms, potatoes crops, and a local abattoir” (North, ST, Elected Official Survey). Similarly, an elected official from eastern Ontario explained: “It is a mixed farming community. Cash crop, beef, dairy, poultry are dominant and smaller enterprises of maple syrup, CSA's, apiaries, and value-added operations are also part of the mix” (East, UT, Elected Official Survey). The planner survey and semi-structured interviews yielded similar responses.

Through these responses it became clear that some respondents were more knowledgeable or “tuned-in” to agri-food systems in their municipality than others. In these cases respondents would comment on trends they had observed, challenges facing the agri-food sector, and specifics about the different commodities grown in their municipality. For example, a planner from northern Ontario explained:

In 2011 we had 55 farms and in 2016 there were 43, showing a decline of 22%, which was pretty consistent with the rest of the district. But the decline was significantly higher than the Province of Ontario, which during that same time period reflected about a 5% decrease. (North, ST, Planner Interview)

This same planner went on to explain the types of agriculture in their municipality:

We see livestock and some cash crop. We see a lot more niche cash crop operations - so farms that are growing on less than 10 acres. ... The growing conditions can be quite turbulent here and there are a lot of external forces that act against folks, so we don't see a lot of large acreage cash crop farms. If we have large acreage farms, typically they are livestock operations. (North, ST, Planner Interview)

Another planner from northern Ontario reported that their municipality had often overlooked the value of agriculture as a result of the municipality's status as an urban centre, but

emphasized that the municipality “does actually have agricultural land and that many larger urban centers can see significant benefits from value-added agricultural products and services” (North, ST, Elected Official Survey). In another instance a planner from eastern Ontario described:

A lot of our farmland traditionally has had a really strong livestock focus. The lands are well suited, especially in the north half of the community, to pasture lands. So we see a strong presence of beef cattle and also sheep and goats. We have a long history of purebred sectors. ... The shifts began in 2003. Because of the Mad Cow outbreak, and the impacts to the beef sector. There were a large number of producers that sold out at that time. And the shift at that time was not out of farming but just dropping the beef component or scaling back herd size. We have also seen an up shift in cropping and goat dairy production. ... And five or six years ago, we saw a really big shift towards grains and oil seeds. Pricing was really good. So there's a lot of land that maybe had been idle or had been hay or pasture land that was actually brought back into production. (East, ST, Planner Interview)

Respondents often took the opportunity to draw attention to what they believed was unique about their municipality. For example, a planner from central Ontario explained:

Our agri-food sector is a little bit more diverse, like we're not so focused on commodity agriculture. ... We've got a pretty diverse area, our top in terms of gross farm receipts is floriculture, nursery and sod. So it's sort of an area that people forget about, but it's massive in the region. So that's a factor to point out from an economic perspective, and really contributes heavily to our economy, but we don't really think about that as being part of agriculture. We also produce 10% of Ontario's apples, and we're home to the largest apple grower and processor in Canada. (Central, UT, Planner Interview)

Similarly, an elected official from western Ontario commented:

Grains and oil seeds are perhaps the dominant activity, however we do have a bountiful horticulture sector in the east and central part of the county (i.e., apples, cucumber, asparagus, peppers). The remnants of a once vibrant tobacco industry is still evident, but

not to the scale that existed 20 years ago. We also are home to one of the largest dairy herds in Ontario. (West, UT, Elected Official Survey)

These responses are examples of a more nuanced understanding of agri-food systems that some respondents possessed.

While many respondents demonstrated a strong understanding of their local agri-food sector, others—both municipal staff and elected officials—had limited knowledge of the agri-food systems in their municipality. In some cases this was the result of the person being new to the role, for example a planner who was new to the municipality or an elected official in their first term on council. However, there were also a number of instances where respondents had been in their role for years, and in some cases decades, and were unfamiliar with agri-food system in their municipality. For example, one planner from eastern Ontario who had over a decade of planning experience with the municipality responded “It’s a good question [what type of agriculture is prominent in your municipality?]. I would say we don’t really know. I could give you the name of someone in economic development. They would probably be the best person to really tell you” (East, UT, Planner Interview). In another instance an elected official from western Ontario commented:

I don’t think agriculture and agri-food activities have ever been on the agenda in my time as a councillor. Perhaps they’re discussed more by the area municipalities which have responsibility for land use approvals and municipal economic development, which the upper-tier does not. I’m vaguely aware that we have some meat processing plants and quite a lot of small farms operated by the Mennonite community which sell produce at local farmers’ markets. These are popular with tourists. I have no idea what crops are grown, other than hay and corn, which I recognize. (West, UT, Elected Official Survey)

These quotes provide examples of respondents who were unfamiliar with the agri-food system in their respective municipalities. Having limited knowledge and awareness of agri-food systems presents a challenge for both planners and elected officials when seeking to effectively consider, respond to, and support the agri-food sector in their municipality.

The variable nature of agri-food systems knowledge is perhaps most evident in municipalities where respondents provided conflicting responses, drawing attention to how agri-food systems planning might be considered differently by those who are more or less familiar with the topic. The divergence in understanding of agri-food systems was most pronounced in primarily urban southern Ontario municipalities and northern municipalities. For example, in a single-tier municipality in western Ontario one elected official reported that they were “not aware of any major issues relating to agriculture as we are an entirely urban and suburban municipality, so there is no real agricultural activity within the municipal limits” and a second elected official identified a “large agri-food and agri-business sector; food innovation; and urban-rural interface” (West, ST, Elected Official Survey). In a northern Ontario municipality one elected official commented “We grow trees for the forestry industry!” and another elected official talked about “Birch Syrup, Wild Blueberries and other indigenous led wild crop farming” (North, ST, Elected Official Survey). These examples illustrate the diverse ways in which respondents conceptualize what is considered to be part of the agri-food system.

In addition to variability in terms of what was considered to be part of agri-food systems, respondents also provided responses that considered different geographic scales. Again this type of response was most common from primarily urban southern Ontario municipalities and northern municipalities. For example, one elected official from northern Ontario commented: “We are in an area that is not conducive to agriculture although areas to the south and west of us have an extensive agricultural industry” (North, ST, Elected Official Survey). Another elected official from northern Ontario commented: “Although our community does not have the facilities highlighted in the question, our community supports agriculture in our region” (North, ST, Elected Official Survey). A planner from a single-tier municipality in eastern Ontario commented:

We are a single-tier municipality and our municipal boundaries are largely the built up area of the town. ... I think for as far as agriculture goes, we provide support. For example, we have machine repair for tractor and farm implements sales. Obviously we're a bit of a service center for a broader area that does include the agriculture industry. (East, ST, Planner Interview)

These responses illustrate that some respondents viewed agri-food systems through a broader regional lens, considering activities and interactions beyond their municipal boundaries.

4.3.2 Importance of agri-food systems

To some extent, respondents' descriptions of agri-food systems reflect their perceived value of agriculture to the local economy. Both the planner and elected official survey asked respondents to rate the importance of agriculture to the local economy, from "not at all important" to "extremely important".

Figures 4.7 and 4.8 depict the importance of agriculture reported by respondents by MMAH Municipal Services Office regions for the planner survey and elected official survey respectively. Overall, respondents from southern Ontario reported agriculture as more important to the local economy than those from northern Ontario. Among southern Ontario respondents, those from western Ontario most consistently rated agriculture as 'extremely important'. Furthermore, the importance of agriculture to the local economy was rated relatively consistently between planning staff and elected officials, with the exception of eastern Ontario where elected officials more frequently responded that agriculture was "extremely", "very", or "moderately" important.

Figures 4.9 and 4.10 depict the importance of agriculture reported by respondents by municipality type for the planner survey and elected official survey respectively. Notably, elected officials from southern Ontario (represented by upper-tier, lower-tier, and single-tier southern responses) reported greater importance of agriculture to the local economy than planning staff. This could be explained by a possible sampling bias where elected officials who participated in this research were more likely to self-select based on a pre-existing interest in agriculture, in comparison to planning staff who were asked to participate based on their seniority.

Figure 4.7 - Planner survey - Importance of agriculture to the local economy by MMAH Municipal Service Office regions

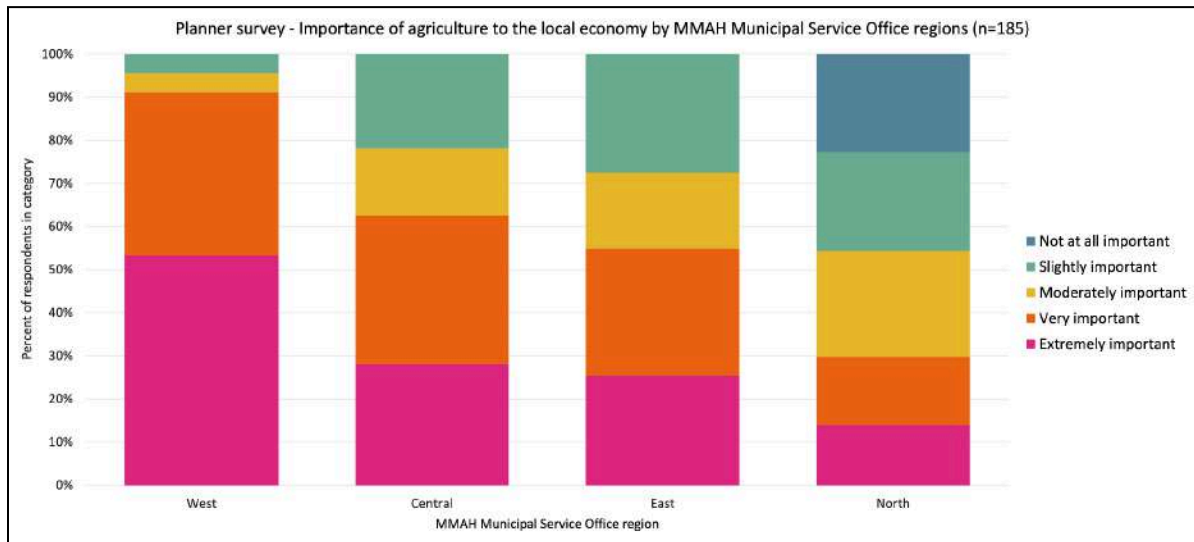


Figure 4.8 - Elected official survey - Importance of agriculture to the local economy by MMAH Municipal Service Office regions

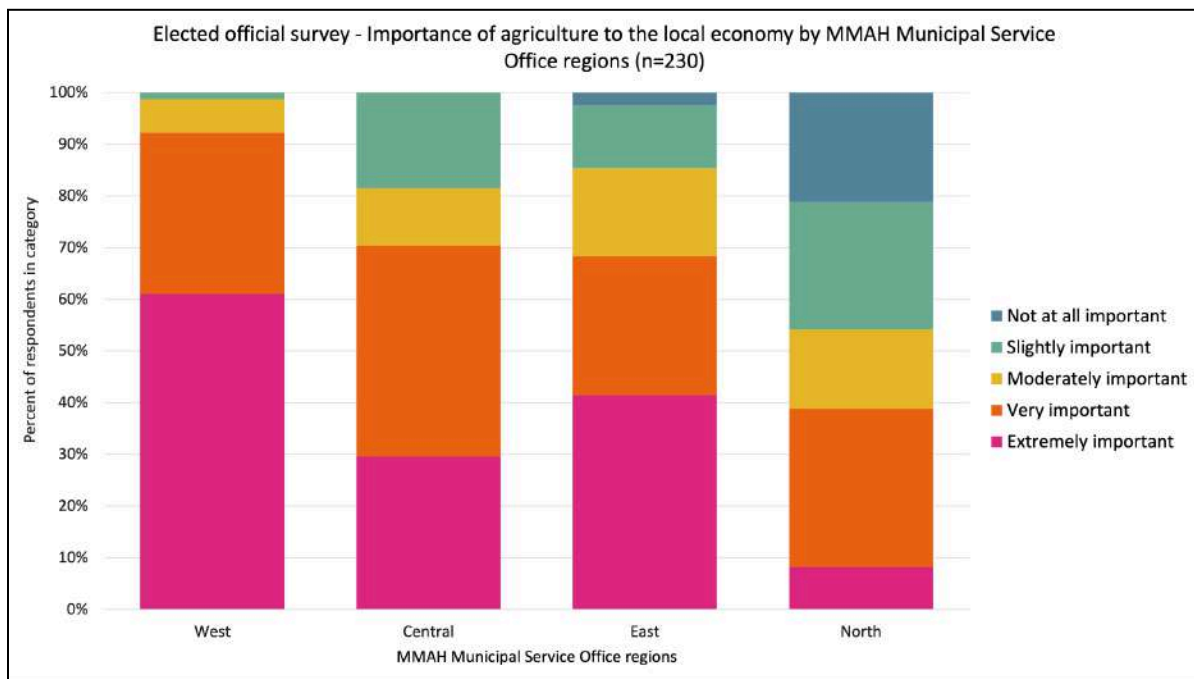


Figure 4.9 - Planner survey - Importance of agriculture to the local economy by municipality type

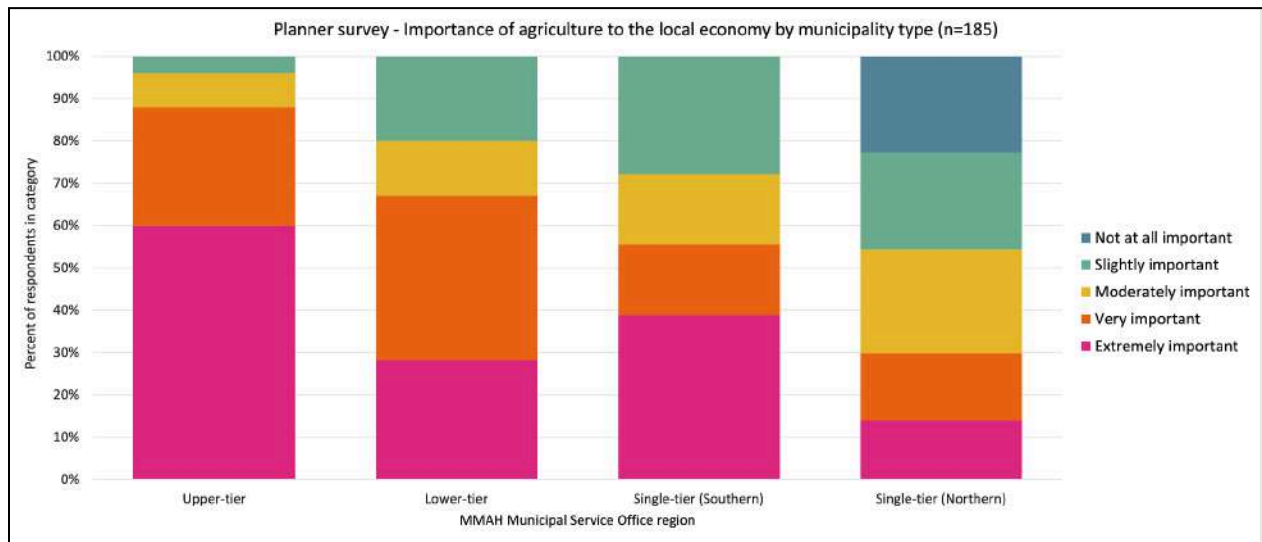
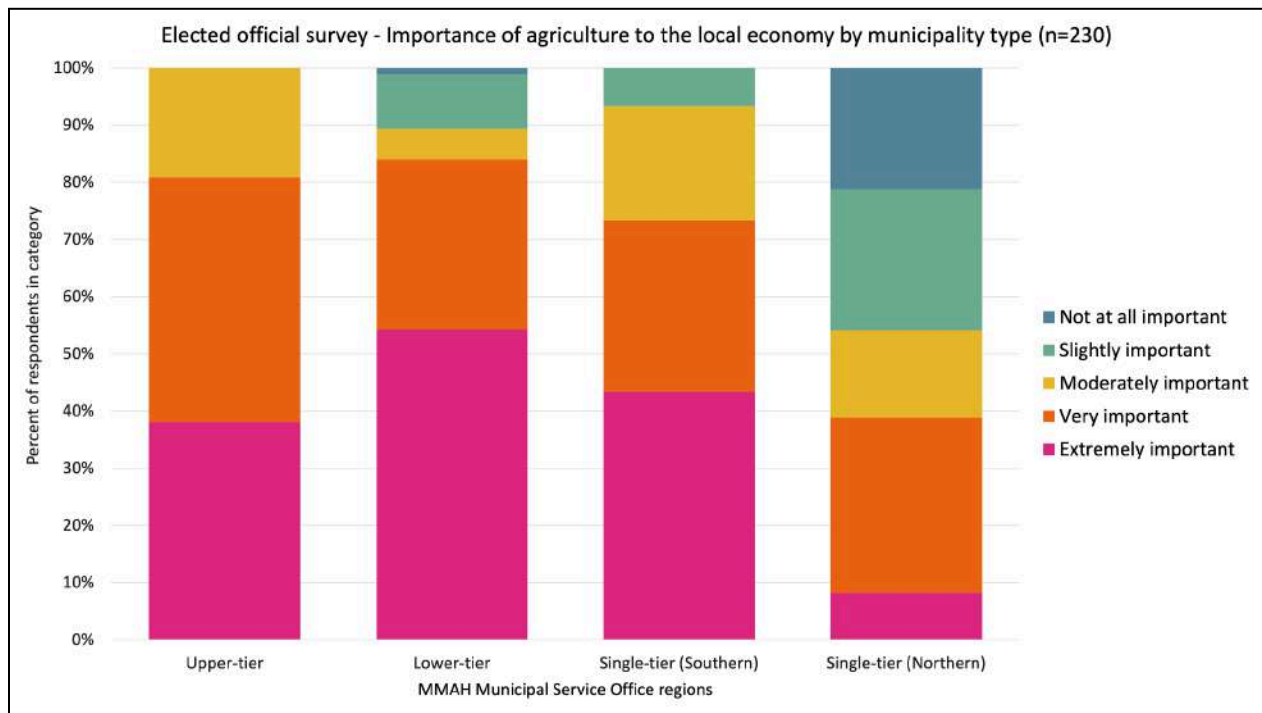


Figure 4.10 - Elected official survey - Importance of agriculture to the local economy by municipality type



4.3.3 Frequency of dealing with agri-food related issues

Both planning staff and elected official respondents were asked how frequently they dealt with agriculture or agri-food related issues and topics. Figures 4.11 through 4.14 depict the frequency that planning staff and elected officials reported dealing with agriculture and agri-food by MMAH Municipal Service Office regions and municipality type. Planning staff reported dealing with agriculture and agri-food related issues on a more frequent basis (daily, weekly, or monthly) than elected officials (monthly or yearly). This difference likely reflects the distinct roles of elected officials and planning staff, and the fact that council meetings typically occur once a month. With this in mind it can be observed that both elected officials and planning staff deal with agriculture and agri-food issues on a relatively regular basis in the context of their respective roles. Notably, planning staff at upper-tier municipalities reported dealing with agriculture and agri-food related issues most frequently. This highlights the critical role that upper-tier municipalities play in terms of providing regional oversight and direction, and supporting lower-tier municipalities with issues related to agri-food systems.

This research also looked at the frequency that municipalities are dealing with agriculture or agri-food related issues in relation to the importance of agriculture to the local economy. Figures 4.15 and 4.16 depict the frequency that planning staff and elected officials deal with agriculture and agri-food issues by the reported importance of agriculture to the local economy. Generally these results show that in municipalities where agriculture is more important to the local economy, both planning staff and elected officials reported dealing with agriculture and agri-food issues more frequently. This finding also indicates that future change and growth in the agri-food sector may result in a greater number or different municipalities seeing an increase in agricultural and agri-food related issues from both a planning staff and elected official perspective.

Figure 4.11 - Planner survey - Frequency of dealing with agriculture and agri-food related issues by MMAH Municipal Service Office regions

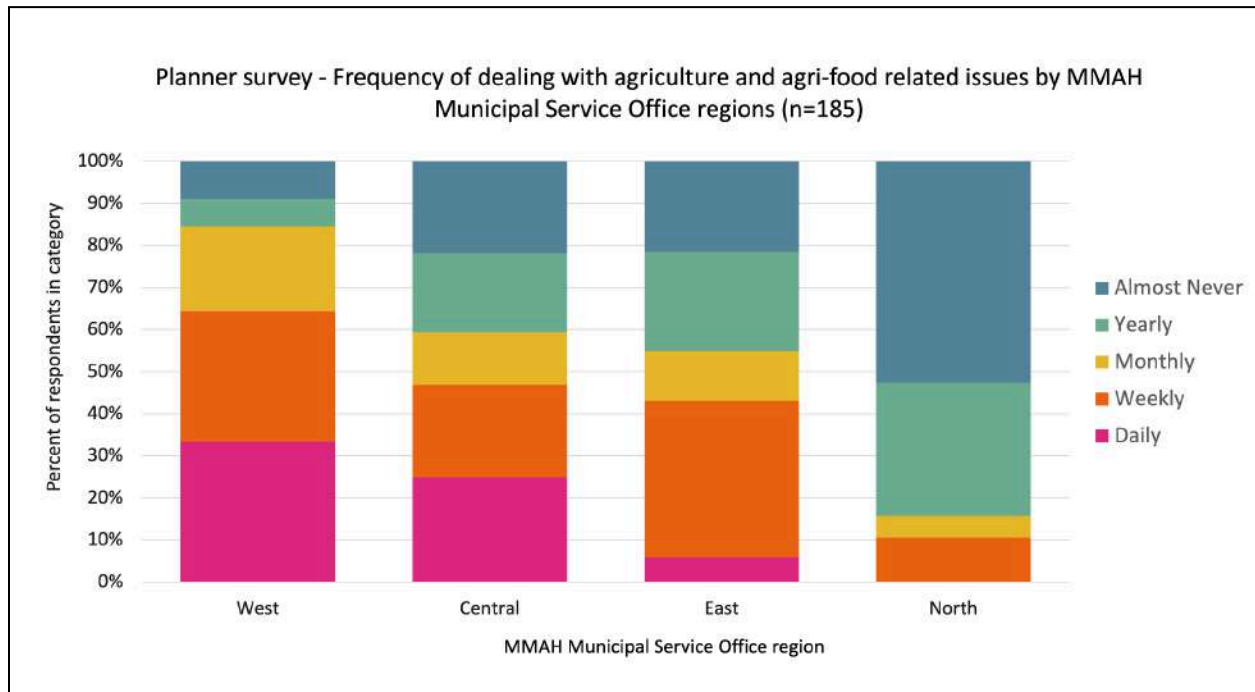


Figure 4.12 - Planner survey - Frequency of dealing with agriculture and agri-food related issues by municipality type

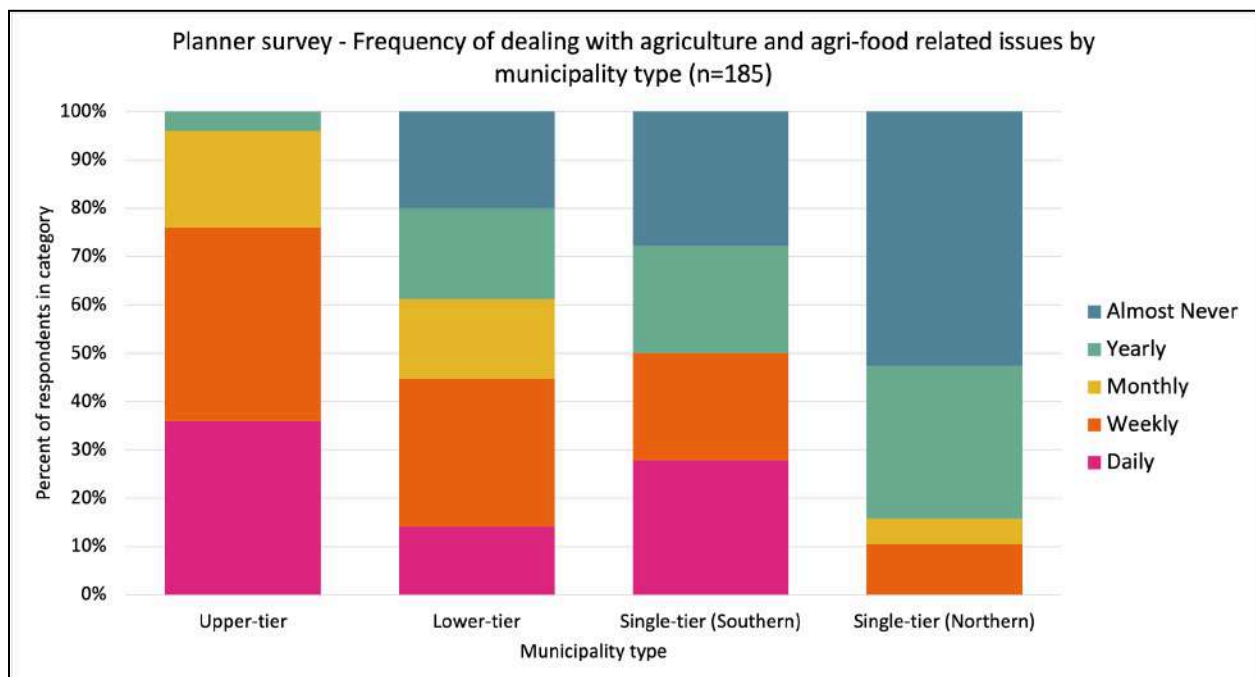


Figure 4.13 - Elected official survey - Frequency of dealing with agriculture and agri-food related issues by municipality type

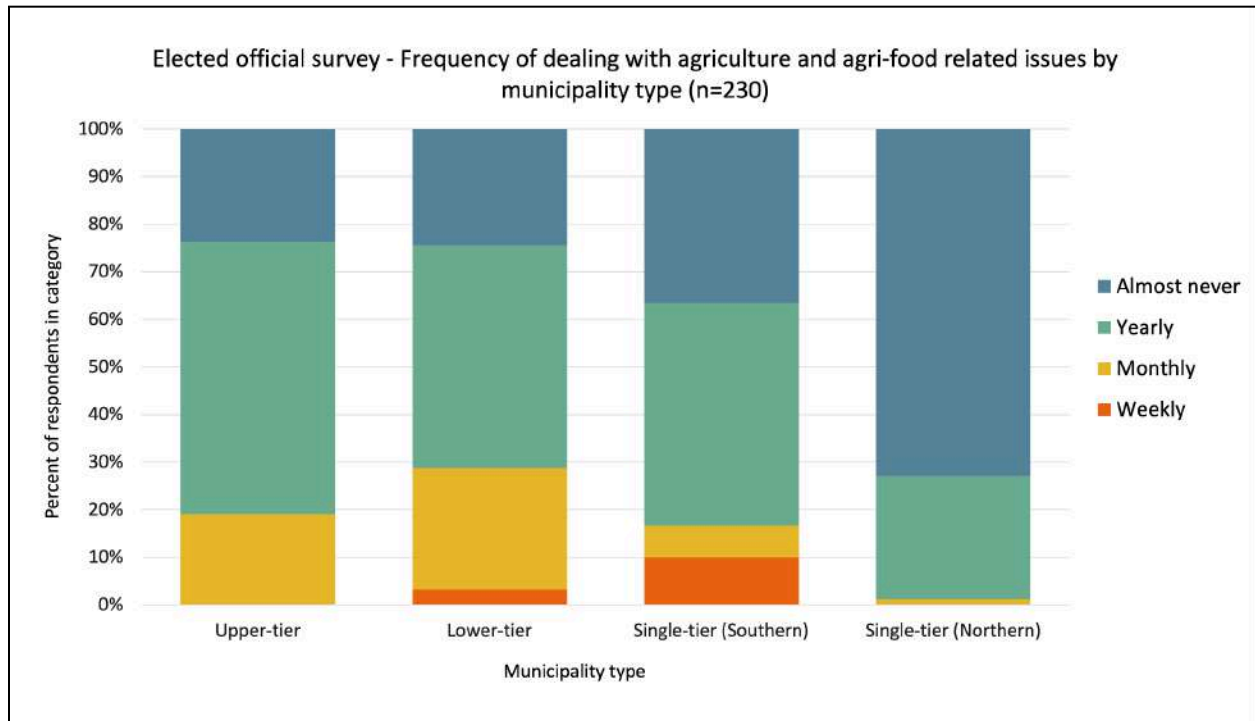


Figure 4.14 - Elected official survey - Frequency of dealing with agriculture and agri-food related issues by MMAH Municipal Service Office regions

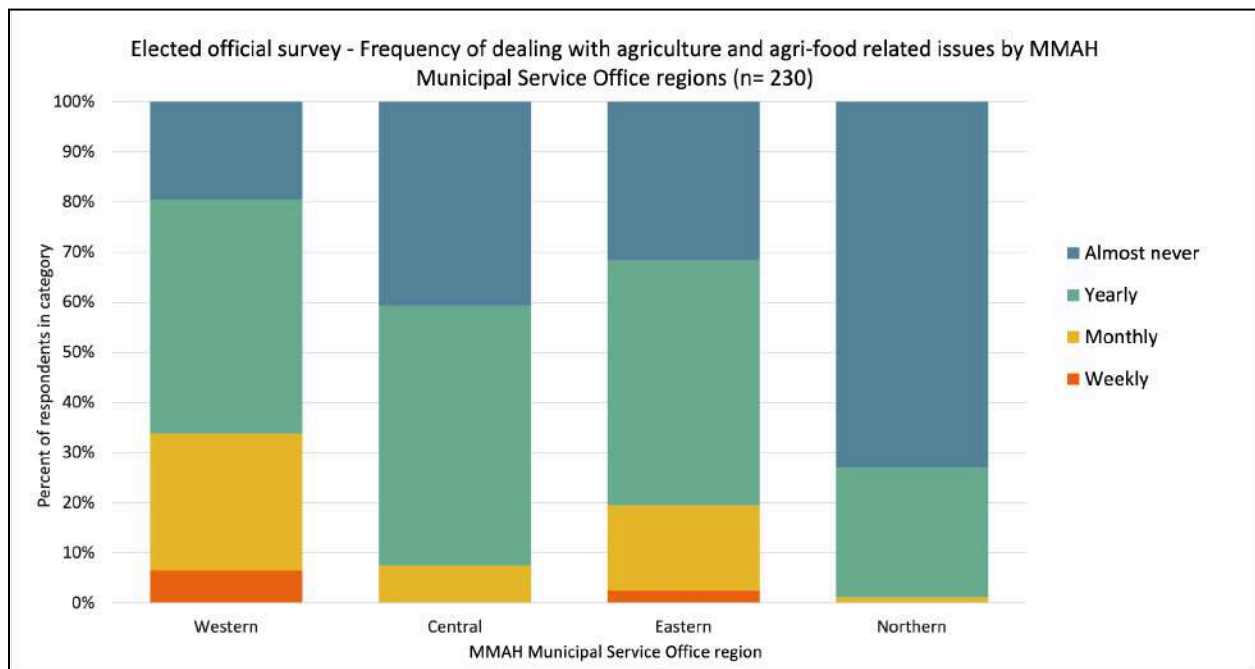


Figure 4.15 - Planner survey - Frequency of dealing with agriculture and agri-food related issues by importance of agriculture to the local economy

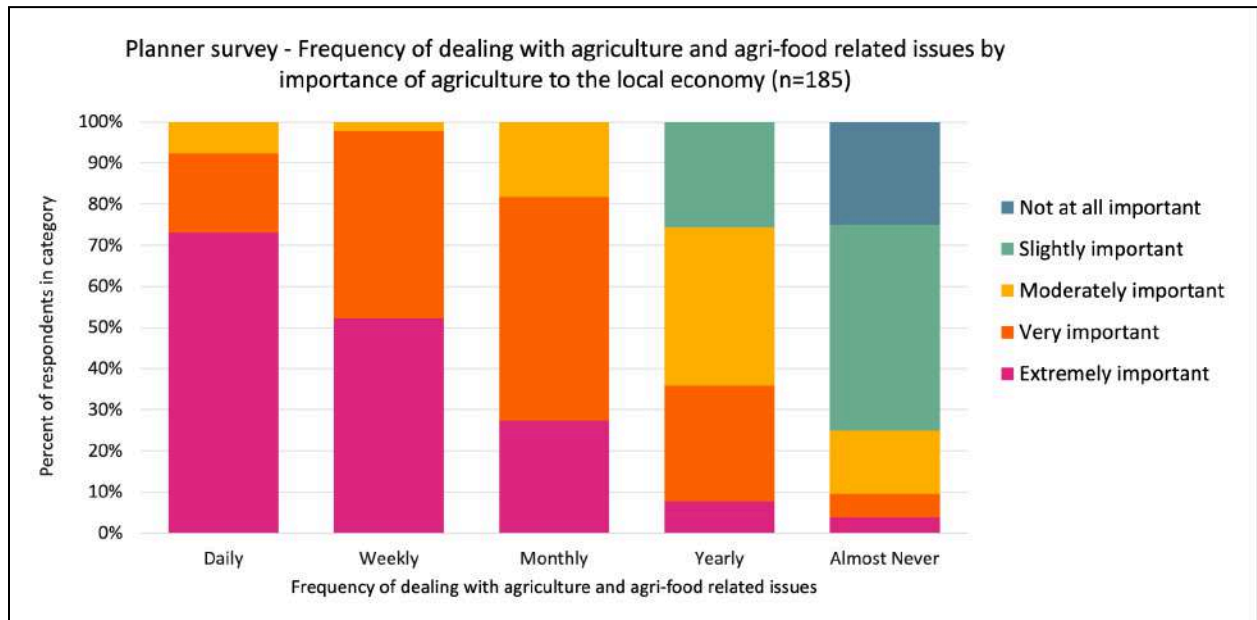
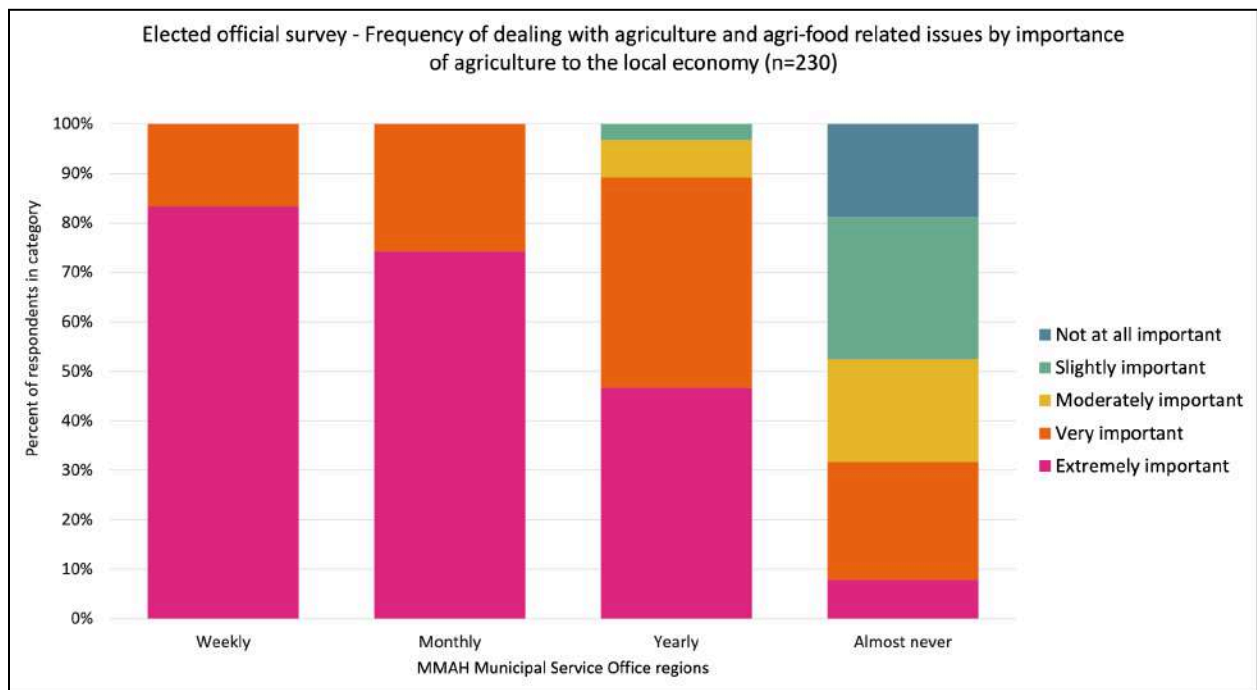


Figure 4.16 - Elected official survey - Frequency of dealing with agriculture and agri-food related issues by importance of agriculture to the local economy



4.4 Contemporary agri-food systems planning challenges

In addition to describing the agri-food sector in their municipality both planning staff and elected officials were asked to comment on the major (site specific or municipality wide) issues related to agriculture in their municipality. Respondents identified a diverse range of challenges including, development pressures, farm succession planning, barriers to entry for new farmers, traffic and road safety, issues related to food access and food security, climate change, and the complex and turbulent land use planning regime in Ontario, among others. In total, qualitative analysis resulted in 28 different codes related to issues and challenges facing the agri-food sector in Ontario. These challenges and issues provide context for understanding the dynamic and evolving nature of both municipal planning and agri-food systems, and the importance of municipal agri-food systems planning capacity. As one planner from western Ontario commented: “It just seems like there are little threats to agriculture all over the place. That, sort of, all add up? It seems like a lot” (West, UT, Planner Interview).

Section 4.4 provides an overview of the issues and challenges identified by elected officials and planning staff in relation to agri-food systems, organized into six overarching themes: (1) Continued pressures on the agricultural land base; (2) Ongoing challenges related to agriculture in the rural area; (3) Changing nature of agriculture; (4) Land use planning framework in Ontario; (5) Larger food systems challenges; and (6) A growing knowledge gap. This section provides a snapshot of key issues and thinking at the time interviews were conducted.

4.4.1 Continued pressures on the agricultural land base

The most frequently discussed challenges among respondents relate to the continued pressures facing the agricultural land base in Ontario. This theme relates to the development pressure on Ontario’s finite agricultural land base, including pressures for rural residential lots, settlement area boundary expansions, and non-agricultural uses, impacts of farm consolidations, and the financialization of farmland. This theme also speaks to the need for farmland protection and the role of planning policy in responsible growth management. As one elected official summarized, “The biggest challenge facing councils relating to agriculture comes from managing

development growth (residential, commercial and industrial) and protecting agricultural lands” (West, UT, Elected Official Survey).

The pressure on farmland in Ontario is not a new phenomenon, and some respondents reflected on the continuation of these pressures throughout their career. Furthermore, many respondents commented that development pressures on the agricultural land base were being exacerbated by the current housing crisis and a Provincial approach that largely fails to consider other planning priorities including environmental sustainability, farmland protection, and the creation of complete and vibrant communities. As one planner summarized:

The province is committed to this 1.5 million homes. Where do you think they're gonna go? And how much of that's going to end up on agricultural rural lands as opposed to intensification? And what's the balance between that going to be? That's the big question. I'm hearing, you know, people are talking about we should be just setting the urban boundary based on 99 years, not even 30 years, right? Depends on who you talk to. So that's going to have some big implications. Because once that horse is out of the barn, you're not going to bring it back in. (Central, ST, Planner Interview)

Another planner commented:

It would be helpful if the Province provided some options for the missing middle in terms of servicing. Rural Ontario wants to be part of the housing solution. But we don't want to gobble up all of our agricultural land, or have scattered rural development, because that costs us in the long run. Give us some servicing options and a viable servicing framework to create affordable community servicing. That could help us be part of the solution. (West, UT, Planner Interview)

Several respondents expressed concern that some of the recent changes to land use planning in Ontario, which aim to support housing and “remove red tape”, fail to address the root cause of the housing shortage and in some cases have resulted in the removal of important checks and balances through the land use planning processes. This concern was often mentioned in conjunction with a reflection about the lobbying power of the development industry and

questions regarding recent decisions made by the Ontario Provincial government (e.g., forced settlement boundary expansions).

Another persistent pressure on farmland, that is not new, but is certainly not going away, is the desire for rural residential lots. Respondents from across Ontario reflected on continued and growing interest from residents looking to live on estate lots in rural areas. These rural residential lots result in fragmentation of the agricultural land base, potentially taking farmland out of production, compromising agricultural viability, and contributing to increased conflicts (between agricultural operations and other rural residents). A planner from eastern Ontario commented: “We're definitely seeing an awful lot of surplus dwelling severances. It's a trend that's been happening in the last 20 years.” The planner further explained:

We still see a lot of interest in severing lots in the agricultural area. Especially in the prime agricultural area. I don't think the word is quite out yet strong enough that it's off limits. There's still lots of people that ask the questions. ... they come out and see all this beautiful land out here and they want to carve it up into subdivisions. (East, ST, Planner Interview)

An elected official from western Ontario explained that in their municipality “continued residential growth on lands designated as secondary agriculture continues to chop up the remaining fields into smaller and more irregular shaped pieces” (West, LT, Elected Official Survey). A planner from central Ontario discussed the challenges they were facing in relation to the misuse of surplus farm dwelling severances and emphasized that “If you're creating opportunities for non-farmers to live in the agricultural area, you're inviting that conflict to take place over time” (Central, UT, Planner Interview). It is interesting to note that in addition to discussing surplus farm dwelling severances, several planners from southern Ontario also discussed ongoing challenges with retirement lots (a policy that the Province has been phasing out since 2005) and lot swaps.

Beyond pressures on the agricultural land base for settlement boundary expansions and rural lot creation, respondents also discussed challenges associated with illegal non-agricultural uses occurring on agricultural land. A planner from western Ontario explained: “We're seeing way

more pressure to both acquire and use farm properties for non-agricultural uses. But you know, in some cases, those are proposed through a planning application. And other times, they may just be happening on the landscape” (West, UT, Planner Interview). Examples of problematic activities occurring in prime agricultural areas identified by respondents include: truck yards, storage, dumping of fill, and agricultural-related and on-farm diversified use that are particularly intensive or large scale and have not gone through required land use planning approvals.

4.4.2 Ongoing challenges related to agriculture in the rural area

The second set of agri-food systems planning challenges identified by respondents includes several ongoing issues related to agriculture and rural areas. These challenges include pressures for mineral aggregate extraction, increased traffic and infrastructure demands resulting from the changing nature of rural communities (e.g., influx of new rural residents as a result of COVID-19), perceived tensions between agricultural and environmental protections, conflicting land uses (namely livestock operations and rural residential uses), minimum lot size for agricultural parcels, and constraints associated with crown land in northern Ontario. Similar to the above discussion about development pressure on the agricultural land base, these challenges are not new and in many cases have been ongoing for decades. For example, in many communities with a growing urban population, increased vehicular traffic contributes to disruptions to the agricultural system, including unsafe conditions for farmers driving agricultural equipment. An elected official from central Ontario commented: “Traffic congestion on our rural roads to move farm equipment is a big problem” (Central, LT, Elected Official Survey). Another elected official noted “traffic creates difficulties and hazardous situations for farm vehicles that need to mix with traffic that is not familiar with the roads or farm equipment on the road” (West, LT, Elected Official Survey). A planner from central Ontario reflected on the situation in their municipality:

The Greenbelt Plan is a fantastic plan for drawing a line in the sand and making sure that agricultural land is protected and preserved for all the value it provides, both from an environmental and agricultural standpoint. But we have farmers that are suggesting that the viability of their operations is becoming challenging because of their proximity to urban uses. The people, the traffic, trying to move their tractors around ... even the

supportive services like tractor maintenance, and repair for other farm equipment, are not easy for them to get to. So our community is struggling with how they maintain a viable agricultural system and sort of mitigate the impacts of the extensive urbanization. I think farmers are nervous about how they will continue to operate and not be disrupted. (Central, UT, Planner Interview)

Beyond impacting the agricultural land base, continued development pressures paired with changing rural communities, have implications for the agri-food network including the businesses, infrastructure, services, and assets that ensure the agricultural sector continues to thrive.

Another persistent challenge is the conflict that often arises with the arrival of new rural residents who are unfamiliar with agricultural practices (referred to as normal farm practices in planning policy). Examples of this include rural residents complaining about noise, light, and/or smell that are part and parcel of agricultural operations (e.g., spreading of manure and biosolids, and light associated with greenhouses). Elected officials from across Ontario often pointed to normal farm practices or the 'right to farm' as one of the key challenges facing their municipality. As one elected official succinctly stated, "the biggest challenge we have is explaining to people what is considered a normal farming practice and why that activity is allowed" (West, LT, Elected Official Survey). Another elected official commented that the biggest challenge in their municipality was "expanding pressures for residential housing in rural and agricultural communities resulting in normal farm practice issues and increased traffic and lack of knowledge around sharing the road with farm equipment" (East, UT, Elected Official Survey). Related to this, Minimum Distance Separation (MDS) was mentioned by several planners as an ongoing challenge related to the introduction of new rural residential lots and settlement boundary expansions. One planner explained:

We are getting pressure to reduce required setbacks from a MDS I perspective from people looking to build single detached dwellings in proximity to a livestock operation. As well we are seeing pressure to reduce the setbacks for MDS II and the expansions of livestock operations. We will do a minor variance for MDS relief, but it's contentious. (West, UT, Planner Interview)

Another planner commented: “MDS has been in the news quite a bit, there's been articles written about it. There's been times in which, it's impacted building permits big time, it's impact planning act applications. It's something we deal with quite a bit” (East, ST, Planner Interview).

Elected officials were also concerned about challenges with MDS. One elected official commented: “It is becoming too common to see a minor variance for MDS which is effectively freezing out future small scale livestock production” (West, LT, Elected Official Survey).

The minimum lot size for agricultural parcels is another challenge that was raised by respondents, particularly upper-tier planners in western Ontario. One planner explained:

The general philosophy has been that larger farms are better. And you need to protect those larger farms to make sure that agriculture remains viable. But then you hear other voices that say, no, it may be prudent to have some smaller farms to allow entry for new farmers, especially around the urban fringes where you might get smaller gardens and smaller farming operations. So that's another issue that continually arises for us. (West, UT, Planner Interview)

Another planner commented: “We have seen significantly increased pressure to reduce our minimum lot size for agriculture. That's both politically, and from the public. And that's because there's this general perception that smaller farm parcels are more attainable from a cost perspective” (West, UT, Planner Interview). An elected official reflected: “Right now our big discussion is minimum farm sizes. There seems to be two ways of thinking, those who need very large acreage and those who wish to grow specialty crops on small acreage” (West, UT, Elected Official Survey). The discussion about lot size has been ongoing for decades and many municipalities have undergone research looking at this very issue - often coming to the conclusion that there are a sufficient number of smaller, existing lots of record with the agricultural area, and that protecting larger farm parcels is advantageous. Nevertheless, the debate over minimum lot size for agricultural parcels continues, possibly fueled by ongoing interest in rural residential lots (also referred to as rural estate lots).

4.4.3 Changing nature of agriculture

In addition to challenges related to protecting the agricultural land base and managing conflicting uses, respondents reflected on the evolving nature of agriculture. Key considerations relevant to this theme included the scale of agricultural operations, the increasing role of technology (including controlled environment agriculture and renewable energy production), the rise of on-farm diversified uses to supplement farm income, the aging farming population and farm succession planning, and a growing emphasis on environmental practices. The three most frequently discussed challenges were the scale of agricultural operations, the increased role of technology, and the growing interest in on-farm diversified uses.

Many respondents reported that agricultural trends in their municipality were towards either larger operations looking to leverage economies of scale, or small-scale niche agricultural operations who differentiate themselves from the market through a greater emphasis on agro-ecological practices, direct-to-consumer sales, and value-added products. Related to these trends, respondents commented on the increasingly corporate nature of farming, the shrinking number of farmers, and a growing reliance on off-farm income. A planner from eastern Ontario explained that in their municipality:

Tractors are getting bigger. The farm buildings are getting bigger. Everything is getting bigger. We're also seeing that family farms are very rare. Nobody's making a living just on their traditional 100 acres. So you're either big agriculture, or if it's not that, they might have like a small little hobby farm. ... So in addition to the really big tractors, we're getting a pile of those little small tractors and people are doing their little hobby farms all over the place as they're retiring and coming out to the area. (East, UT, Planner Interview)

An elected official from western Ontario shared a similar perspective:

In general farming is becoming more and more of a large corporation rather than the traditional family farm. There is also a misconception that farming for the most part is economically providing the lifestyle. For the most part farming relies on at least one

member of the family generating income from a non-farming related job. (West, LT, Elected Official Survey)

The corporatization of agriculture is something that many respondents from southern Ontario discussed. A planner from eastern Ontario explained that in their municipality they are seeing companies “establish business partnerships to make underused agricultural land more productive. I guess the term is financialization. They pull together many pieces of land and it ends up being 1000s of acres. The small farms just disappear” (East, UT, Planner Interview). A planner from western Ontario reflected: “What's so striking to me is how much agriculture has changed in really a relatively short period of time, really two generations” (West, UT, Planner Interview).

In addition to discussing changes and challenges associated with the scale of farm operations, respondents reflected on the role of technology in changing agricultural practices. One of the changes in agriculture as a result of technology is the increased prevalence of controlled environment agriculture including vertical agriculture, greenhouses, and hydroponics, among others. In relation to greenhouses, respondents discussed some of the challenges associated with a growing greenhouse sector, including increased demands for municipal services, complaints about light pollution, and quandaries about whether or not controlled environment agriculture was truly the best use for prime agricultural land (where Canada Land Inventory soils 1, 2 and 3 predominate). A planner from western Ontario explained some of the challenges their municipality was facing in relation to greenhouses:

Change from traditional farm practices to greenhouses also does not involve any planning instruments (i.e. no change in zoning), so we cannot plan for greenhouses the same way we could for an industrial subdivision (i.e. infrastructure, roads, services, regional stormwater management, etc.). The municipality is engaged through site plan control but not engaged in determination of where greenhouses go. Greenhouse lighting is addressed through lighting and odour (i.e. cannabis) by-law and the installation of curtains. Our municipality recognizes the importance of agriculture but is challenged by not being engaged in proper planning for the intensity and scope of the development. (West, LT, Planner Survey)

As a response to the challenges associated with controlled environment agriculture, some municipalities were considering policies and approaches that would allow for more proactive planning. In one municipality a greenhouse strategy to identify and prioritize areas for greenhouse development along municipal servicing/infrastructure corridors was being considered (West, ST, Planner Interview). Other municipalities considered directing controlled environment agriculture to industrial properties where adequate servicing already existed through allowing controlled environment agriculture as of right within industrial areas. It should be noted that not all municipalities across Ontario are facing the same intensity of change associated with controlled environment agriculture and in many cases controlled environment agriculture is allowing new or expanded agricultural production of certain commodities. For example, some municipalities in northern Ontario (in areas with poorer quality agricultural land and a harsher winter climate) discussed the opportunity associated with controlled environment agriculture and are hopeful to see growth in the sector. In southern Ontario, a planner discussed that controlled environment mushroom production allows producers to locate much closer to settlement areas as a result of reduced odour associated with indoor growing practices (West, UT, Planner Interview).

The growing interest in on-farm diversified uses (OFDUs) is another agricultural trend impacting municipal services. Respondents across Ontario highlighted concerns about increased traffic, water use, and wastewater management associated with these uses. On-farm diversified uses are a relatively new permitted use in prime agricultural areas and have quickly become very popular in proximity to urban centers where people living in the city are looking for a weekend or day-trip experience in nearby rural areas. One planner explained:

We have received oodles of inquiries about on-farm diversified uses, agriculture-related uses and just people trying to diversify their agricultural operations, or even people who live in the agricultural area who aren't necessarily farmers who are looking to start some sort of business in the agricultural area. (West, UT, Planner Interview)

Respondents shared several concerns related to the rapid proliferation of on-farm diversified uses in southern Ontario where some of Canada's best farmland is located. One planner

reported that on-farm diversified uses were the largest problem in the municipality, explaining that:

The biggest challenge I have seen since coming to the municipality (and looking through older planning applications) is ensuring that agricultural properties remain the principal use of the property. A lot of people want to build large OFDUs on their wineries or properties. Increasingly, investors want to build OFDUs on agricultural properties but don't want to do any farming or when they do, it's only for social media purposes.

(Central, LT, Planner Survey)

Another planner explained that in their municipality farm businesses (agricultural-related uses) have always been permitted, but that increased permissions for non-agricultural uses through on-farm diversified use were cause for concern. The planner explained:

I'm not as comfortable with the other businesses that are now permitted on farms. For example, a furniture manufacturing operation - on a 50 acre site - is basically a factory - but still considered secondary because they kept it within the acreage size. And to me, it seems like it works against climate change. Now all of these people are driving to this location to work in addition to all of the pickups and deliveries. And if the business had been in town, there would have been the opportunity that people could walk to work. It would have been much more integrated into our community. It might have had some good spin off effects on the downtown. (West, UT, Planner Interview)

A third planner commented:

I think the Province opened it up a little too far [for on-farm diversified uses]. You know, some of the examples that they give aren't necessarily really related to the farm at all. And we have people who want to do home window businesses ... all sorts of things. I understand the concern that some of the agricultural communities have brought forward. (East, ST, Planner Interview)

In many cases planners and elected officials identified unintended consequences such as increased road traffic, impacts associated with parking (for large events or wedding venues), increased conflict associated with normal farm practices, the tendency for on-farm diversified

uses to outgrow their permitted size, and the increased number of non-agricultural uses that are being permitted in the countryside. Respondents also discussed cumulative impacts of on-farm diversified uses in municipalities where on-farm diversified uses have become particularly popular, and in areas of the province that are already seeing a higher number of other non-agricultural uses (e.g., golf courses, mineral aggregate resource extraction). One planner argued that:

Without any form of cumulative impact assessment for agriculture, without a no-negative impact test (like we have for key features of the natural heritage system) and without a supply baseline/demand forecasting/strict conversion policies (like we do for employment lands) the agricultural system continues to remain at risk and in a state of decline. Prime agricultural lands outside of the Greenbelt are not sufficiently protected. (Central, LT, Planner Survey)

While respondents acknowledged that Provincial guidance on agricultural impact assessments, and on-farm diversified and other permitted uses was helpful, they emphasized the need for additional information and support in this area.

4.4.4 Land use planning framework in Ontario

The land use planning framework in Ontario was another challenge that was widely discussed by respondents. Beyond discussing the limitations of existing land use policy aimed at protecting farmland, both planners and elected officials reflected on the quantity and frequency of changes to the planning process in recent years. Respondents discussed changes to the Planning Act and Provincial Policy Statement, increased involvement of the Ministry of Municipal Affairs and Housing in local planning matters (e.g., settlement boundary expansion decisions), and the unprecedented use of Minister's Zoning Orders among other changes. One elected official from central Ontario provided a tongue-in-cheek comment that “we do not have challenges making decisions related to agriculture, unless you consider new policies the Province throws at us” (Central, LT, Elected Official Survey). Another elected official shared a similar perspective: “The biggest challenge is the complexity of the Provincial planning process. It continues to get more complicated and time consuming” (West, LT, Elected Official Survey).

This sentiment was shared by both elected officials and planners who felt that planning processes were becoming increasingly complicated and that recent changes were both a drain on municipal resources and a source of confusion for their constituents. A planner from eastern Ontario explained:

Current planning legislation is quite malleable under this current provincial government. And so it's a tough justification. Some days when somebody comes in and said, well, "I could do this before" ... well, now you can't. Or "you can't do this to my property" ... well, we can, the legislation has changed. So maybe there is a need for a more enlightened dialogue, but it's very hard to get enlightened when there's not a lot of tolerance, grace or patience out there. (East, UT, Planner Interview)

There was also a shared perspective that these changes were largely disconnected from the realities of municipal governments and the needs of local communities. A planner from northern Ontario shared their frustration:

Both the political side and administrative side of the provincial government does not understand the day-to-day realities of municipal conditions. I suppose it's not new, but, politically and probably administratively, a lot of these people cut their teeth at the municipal level. And I don't know where the disconnect is, ... we literally get new changes, new expectations, new requests, new demands, from the Province, weekly and you just look at it and say [...]. (North, ST, Planner Interview)

Many planners and elected officials from across Ontario expressed that land use planning in Ontario was going through a period of unprecedented change. Respondents also discussed the increased workload, burnout and staff turnover associated with uncertainty within the profession.

4.4.5 Larger food systems challenges

Respondents often linked local municipal agri-food system challenges to broader national and global food system trends. Some examples of big picture thinking about food systems include comments about impacts of environmental impacts, food waste, food access, healthy diets, challenges associated with farm labour, global markets, trade agreements, and impacts of

federal policies (e.g., the carbon tax) on the agri-food sector. Respondents also discussed the aging farm population and challenges with succession planning and land access. For example, one elected official commented: “Succession planning appears to be in trouble and it seems to me that it might affect the future strength of farms and farming” (East, LT, Elected Official Survey). Another elected official commented that the biggest challenges in their municipality were “access to markets” and “transportation of inputs and commodities” (North, ST, Elected Official Survey). A third elected official commented that “corporate greed and the farmer not getting their share” are the main issues facing the agricultural sector (West, LT, Elected Official Survey). This big picture thinking about food systems was most often shared by elected officials, who were also more likely to comment on regional agri-food systems trends, gaps in the agri-food network, or their awareness about what was happening in neighbouring municipalities.

Planners also commented on broader food systems challenges. One planner reflected:

We talk about local food, but our whole planning system is set up so that food is mass produced and shipped away. Which is great. But that’s how we approach land use planning policy in this province with respect to farming. (West, UT, Planner Interview)

Another planner commented on the complexity of agriculture, noting that:

I think most levels of government genuinely want to help farmers and the farming community. But it's so complex. It’s not like there is just one thing to fix. ... Farmers are at the mercy of foreign markets, the weather, the environment, the local markets, all that sort of stuff. (West, UT, Planner Interview)

Related to larger food systems challenges, many respondents also shared their experience with conflict between agricultural and environmental stakeholder groups, particularly as it relates to natural heritage systems. Planners expressed continued discussion and pushback from agricultural organizations and farmers in their municipality regarding the mapping and implementation of natural heritage systems (required by provincial policy). One planner explained:

Probably the biggest issue is that the region has many priorities that we need to balance. And there are many in the agricultural community that were not very happy with the natural heritage system. And it's about balancing the needs of the agricultural system while protecting natural heritage assets. (Central, UT, Planner Interview)

This experience was shared by respondents across southern Ontario, particularly from upper-tier municipalities that are responsible for implementing the natural heritage system through their Official Plans. In some municipalities across Ontario, misunderstandings and skepticism regarding natural heritage systems policies has led to significant community mobilization. A planner from central Ontario explained:

One thing that we have heard very, very loudly and clearly in our work with the Federation of Agriculture and our Agricultural Advisory Committee, and the local agricultural sector in general, is that farmers don't want any restrictions on their property. And that has become synonymous with restrictions related to environmental and natural heritage system policies. They're very weary and leery of those additional layers of restriction being added. ... It's a tough one for planners to deal with, because we are very much in agreement and in favor of protecting and maximizing the agricultural systems and agricultural lands, to the extent that we can. But we also understand that the natural heritage system policies have extreme importance as well. And, there are very powerful and prominent advocacy groups on both sides that really don't see eye to eye in a lot of ways. (Central, UT, Planner Interview)

Respondents reflected that the pushback related to natural heritage systems largely stems from a lack of knowledge of how agricultural systems and natural heritage systems policies work together. This reflects the increasing complexity of land use policies in Ontario, and the widening knowledge gaps in both land use planning and the agricultural sector.

4.4.6 A growing knowledge gap

The final set of challenges identified by respondents relates to knowledge gaps in municipal agri-food systems planning. More specifically, respondents identified three key knowledge gaps related to the agricultural sector and food systems: (1) knowledge on municipal councils related

to agriculture and agri-food systems, (2) planning professionals knowledge related to rural and agricultural planning approaches and policies, and (3) rural residents knowledge about the realities of rural living and agricultural practices. Respondents also discussed the knowledge of the general public and farm community in regards to land use planning and the challenges associated with explaining an increasingly complex and turbulent land use planning regime in Ontario. All four of these knowledge gaps were mentioned most consistently by respondents from northern Ontario where planning staff, elected officials, and residents are generally less exposed to both planning processes and the agricultural system. For example, one elected official from northern Ontario commented:

The majority of council members have no knowledge of the agricultural situation. We are not an agricultural community and therefore certainly should be educated more about how critical agriculture is to survival and health of our community and how climate change is creating grave concerns for the future in regard to all types of farming.
(North, ST, Elected Official Survey)

In another northern Ontario municipality, the planner reflected on their capacity to respond to agri-food planning related issues, saying “if the inquiry pertains to agriculture, we definitely don't have any capacity in that field. If it pertains to, like zoning requirements and things of that nature, we have limited capacity” (North, ST, Planner Interview). However, it is not just northern municipalities that identified challenges associated with limited knowledge related to agri-food systems. A planner from western Ontario shared a similar sentiment:

I would say, we have a fairly high level of expertise when it comes to the different planning instruments that get used across economic sectors, including agriculture, but we don't have staff who are farm kids, whose day-to-day work and knowledge revolves around agriculture. (West, ST Planner Interview)

Several respondents from southern Ontario reflected on processes of urbanization and the growing urban population as contributing to the growing disconnect between people and the food systems on which they depend. A planner explained:

As our municipality grows and becomes more urban, the protection of agriculture and our food system becomes more imperative yet there are less and less staff who are directly impacted by rural and agricultural issues so they have less understanding of things like normal farm practices or the direction agriculture is heading. (Central, UT, Planner Interview)

Another planner commented that these challenges are particularly acute for municipalities within the Greater Toronto Area (GTA):

Municipalities are often referred to as 'urban' due to the concentration of population in urban areas and are typically overlooked as it relates to rural issues on a provincial scale. The low population in the rural area means fewer representatives on council and fewer constituents to motivate councillors to prioritize rural/agricultural issues. ... The community at large generally does not have sufficient awareness of/regard for rural and agricultural issues. (Central, LT, Planner Survey)

Beyond the GTA, many respondents noted similar challenges in relation to knowledge about agricultural issues. An elected official from eastern Ontario commented that in their municipality “too many people on council and staff (including at the upper-tier) are not able to relate to agri-food issues and are more concerned with non-agricultural residences being impacted negatively by agricultural issues” (East, LT, Elected Official Survey). Another elected official reflected: “People working in agriculture are also serving as educators and ambassadors. Often, their ‘students’ are ill-informed and 50 years out of date” (East, LT, Elected Official Survey).

Urbanization and a growing urban population have contributed to widening knowledge gaps in rural and agri-food systems. Additionally, respondents noted that the migration of city dwellers to rural areas during COVID-19 exacerbated conflicts, particularly concerning normal farm practices. In this context, some respondents reflected on the role they could play in better educating the general public about the realities of living in proximity to agricultural operations. One elected official commented: “Municipalities must make sure that rural housing projects are well aware of what it is like to live in a farming community - the sights, sounds and smells. This

seems to be the issue when non-farmers build estate homes in the rural area” (Central, LT, Elected Official Survey). Another elected official commented:

With the ongoing influx of new residents from generally more urban areas, I see an opportunity (perhaps even a need) to educate the public on the vital role that agriculture plays in our community - and, indeed, the vital role that it plays in our society. (East, LT, Elected Official Survey)

However, it is not just new rural residents who require additional information and support in learning about the agri-food system, municipal elected officials often identified their own knowledge or the knowledge of their peers as a challenge. An elected official from western Ontario succinctly commented that in their municipality there was “a pronounced disconnect between the in-house knowledge and the importance of the agricultural industry locally” (West, LT, Elected Official Survey). Some respondents commented on the changing makeup of municipal councils and an increased number of councillors with limited knowledge about agriculture. An elected official from northern Ontario reported:

Lack of understanding about agriculture to be able to better assist our farmers. The whole farming process is totally new to most of our council. It is election time soon and we are hoping for some new farm expertise to come on board. (North, ST, Elected Official Survey)

Similarly, a respondent from southern Ontario explained that in their municipality:

There is a growing division with council between those who understand the importance of agricultural and protecting agricultural land and those focused on creating development opportunities including severances for residential uses, expanding urban boundaries and establishing rural lands designations to allow for more residential severances. For a municipality that has such prime farmland, political decisions undermine efforts to protect farmlands. (West, ST, Planner Interview)

Respondents largely felt that a growing knowledge gap related to the agriculture and food sectors was a risk to the long term protection and viability of local and regional agri-food systems.

It was also generally acknowledged that planning education did not adequately prepare planners for rural and agricultural planning issues and approaches. Respondents were critical of existing planning education and training programs which largely fail to address topics related to agri-food systems planning. A planner from central Ontario noted in their survey response that:

Although there are planning staff that may work on or be dedicated to agricultural issues, very few have educational/technical credentials in rural planning/agronomy/agrology (myself included). Planning degrees are very general in this regard - they are heavy on planning theory and highly focused on urban issues. (Central, LT, Planner Survey)

A planner from western Ontario discussed their frustration with planning education at length, stating that “There is a deficiency for sure. No questions asked. It's a pet peeve of mine. If you're going to be a planner, you should know about agriculture” (West, ST, Planner Interview). They went on to explain that “the way rural planners do planning is so different from urban planners. We're dealing with different types of business and operation and the way the universe works is very different in a rural, agricultural setting versus a purely urban setting” (West, ST, Planner Interview). Another planner echoed this sentiment, explaining that:

Planning in a rural area is very, very different. The issues, the challenges, the considerations, whether you're talking a rural settlement area, or agriculture or rural areas, the considerations are very different than in an urban area. I truly believe that there needs to be a rural and agricultural lens put on things. (Central, UT, Planner Interview)

Similarly, a third planner reflected on their agricultural background and training:

I grew up on a farm. I did my bachelors in agriculture. I live on a farm. So there are a lot of things I take for granted, because I just grew up knowing them. People who haven't had that same experience don't necessarily think the same way. It's just not in their bailiwick. It's not what they've experienced. (Central, UT, Planner Interview)

Agri-food systems knowledge was widely recognized as a key component of effective municipal agri-food systems planning, including support for farmers. One planner sympathized that “I

suspect farmers often experience frustration transferring their knowledge to the planners and other staff who they are dealing with face-to-face, and, you know, explaining the actual issues and problems that farmers have” (Central, UT, Planner Interview). The interaction between municipal staff and farmers was discussed by several respondents who largely felt that the knowledge gap went both ways - planning staff were often unfamiliar with agricultural operations and farmers could use more support in understanding land use planning policies and approaches.

4.5 Factors impacting municipal agri-food systems planning capacity

The agri-food systems issues and challenges identified by respondents provides context for understanding the evolving nature of municipal planning and agri-food systems, and the importance of municipal agri-food systems planning capacity. Section 4.5 discusses several factors that impact municipal agri-food systems planning capacity. This section draws on data from all three primary data collection methods, including the elected official survey questionnaire, planner survey questionnaire, and planner semi-structured interview. As a reminder, Chapter 4 focuses specifically on Research Question 2: *Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?* This research question is further explored through three sub-questions:

1. *What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?*
2. *Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?*
3. *How does municipal agri-food systems planning capacity vary across the province?*

Through closed, open, and combination questions respondents provided a range of data related to their capacity to respond to and support agri-food systems in their municipality. These findings are organized into four overarching themes:

1. Planning department structure and personnel;

2. Relationships with other municipal departments and external actors;
3. The land use planning framework in Ontario; and
4. A commitment to local and regional agri-food systems.

Within each of these themes individual factors which contribute to and/or hinder municipal capacity will be discussed.

4.5.1 Planning department structure and personnel

The first theme or group of factors related to municipal agri-food systems planning capacity includes consideration for the planning department structure and personnel. Specifically these factors include planning department structure, staffing levels, the available budget for agri-food systems planning, approaches to planning service delivery, challenges with staff retention and hiring, and the role of consultants. Each of these factors is complex and has the ability to contribute to and/or hinder municipal agri-food systems planning capacity.

4.5.1.1 Planning service delivery

While all municipalities in Ontario are expected to implement and uphold provincial priorities related to land use planning, the resources available to them vary widely. Not all municipalities in Ontario have planning staff in-house, some municipalities rely on alternative arrangements to provide land use planning services. Table 4.4 and Figure 4.17 outline how planning services are provided by municipalities across Ontario, as reported through the planner survey questionnaire. It is interesting to note that all upper-tier and single-tier municipalities in southern Ontario have planning staff in-house, with planning services being its own department or part of a larger department. Respondents who indicated that their municipality did not have an internal planning department or employ planning staff were more likely from lower-tier municipalities or single-tier municipalities in northern Ontario. The absence of in-house planning staff was most prevalent in northern Ontario, where municipalities are more likely to have smaller staff complements.

In terms of planning staff being located within a larger department, a variety of different arrangements were reported through the planner survey and interview. The most common arrangement was a combined department with planning and economic development and/or

building services. However, planning staff reported a variety of different department structures including working alongside municipal engineering staff, bylaw services, emergency planning, public works, enterprise services, parks and forestry, property and asset management, legislative services, GIS, real estate, and corporate services, among others. Integrating planning within a larger department often facilitates coordination between planning staff and other municipal service areas, such as engineering, building services, economic development (see Section 4.5.2). Furthermore, this integration between planning and other service areas often meant greater awareness of municipal initiatives related to agri-food systems planning across service areas and consideration for how municipal services and functions interact with agri-food systems overall.

Table 4.4 - Summary of planning service delivery reported by municipality type				
	Upper-tier (UT)	Lower-tier (LT)	Single-tier Southern (ST-S)	Single-tier Northern (ST-N)
Planning is its own department	15	36	5	10
Planning is included as part of a larger department	10	38	13	23
The municipality does not have an internal planning department nor does it employ planning staff	0	11	0	24

For municipalities that did not have in-house planning staff, there were a number of different arrangements for how planning services were provided. Figure 4.18 depicts planning service delivery for municipalities without planning staff, including the reliance on outside consultants, planning services being provided at a regional or district level, and having a staff member in-house who provides support for planning services (e.g., CAO, Clerk, building official). It should

be noted that respondents were able to select multiple options and often planning services were provided through a combination of consultants, regional or district partnerships (e.g., upper-tier municipalities in southern Ontario and planning board in northern Ontario), and in-house coordination. It is interesting to note that respondents from northern Ontario more often reported relying on consultants to provide planning services. The increased involvement of the regional government in planning services in southern Ontario is explained by the two-tier municipal structure common in western, central, and eastern Ontario. In areas with a two-tier municipal structure the provision of planning services was varied - in some cases the upper-tier municipality would provide planning services for all of the lower-tier municipalities within their geography, other times they would provide planning services for a subset of the lower-tier municipalities, and in other instances all of the lower-tier municipalities within a specific region would have their own planning staff and/or department. As one planner from an upper-tier eastern Ontario explained: "In some cases the lower-tier has their own planning staff - it's a real mixed bag from the bigger places having professional services, to planning coordinators, to a clerk still dealing with planning with the help of consultants" (East, UT, Planner Interview).

In northern Ontario, municipalities that indicated planning services were provided at the district or regional level most often referred to the presence of a planning board in the area. That being said, there were a few municipalities that had alternative arrangements for planning services including sharing planning staff between municipalities or the reliance on MMAH for planning services. A respondent from northern Ontario explained that MMAH provided the majority of planning services for their municipality:

It used to be that planning decisions came to the township first and we either said yes or no and then that went to the MMAH. But we ran into the issue that some of our rules didn't match the ministries and they changed the process so they see planning matters first. As far as I know, no other municipalities use the ministry for planning services. But we never felt equipped to make planning decisions. (North, ST, Planner Interview)

The Ministry of Municipal Affairs and Housing maintains [a database which outlines Planning Act approval authorities for municipalities and planning boards across Ontario](#) (MMAH, 2023b).

While this spreadsheet does not address all planning functions within a municipality, it does

provide an overview of the approval authority for official plans and amendments, municipal zoning by-laws, subdividing land into multiple lots (e.g., a plan of subdivision), creating condominiums (plan of condominium), and severing land (e.g., consents). This database provides insight into which planning approvals each municipalities have taken on - this is in some ways a reflection of a municipalities capacity related to land use planning. It is interesting to note the relationship between upper- and lower-tier municipalities, where upper-tiers are the approval authority for the majority of planning act decisions. Notably, there are a handful of other northern municipalities that rely on MMAH for approval authority related to all planning act decisions (including consent applications).

In considering the presence or absence of a planning department, the planner survey also asked respondents to record when the planning department was established in their municipality (Figure 4.19). The sample size for this question is relatively small as it was only included for respondents who indicated a stand-alone planning department. Furthermore, nearly 30% of respondents who indicated their municipality had a stand-alone planning department, responded that they did not know when the planning department was established. This trend could speak to lost organizational knowledge and staff turnover (that will be discussed later in this section). It is also interesting to note that across all municipality types, a handful of respondents indicated that their planning department was established post 2010 indicating that in these municipalities land use planning is a relatively new in-house service area. The other notable trend is the significant number of planning departments established in the 1970s, particularly for upper-tier municipalities. This trend is likely the result of discussions related to municipal restructuring and the creation of regional municipal governments in the 1960s and 1970s in southern Ontario.

Figure 4.17 - Planner survey - Planning service delivery by municipality

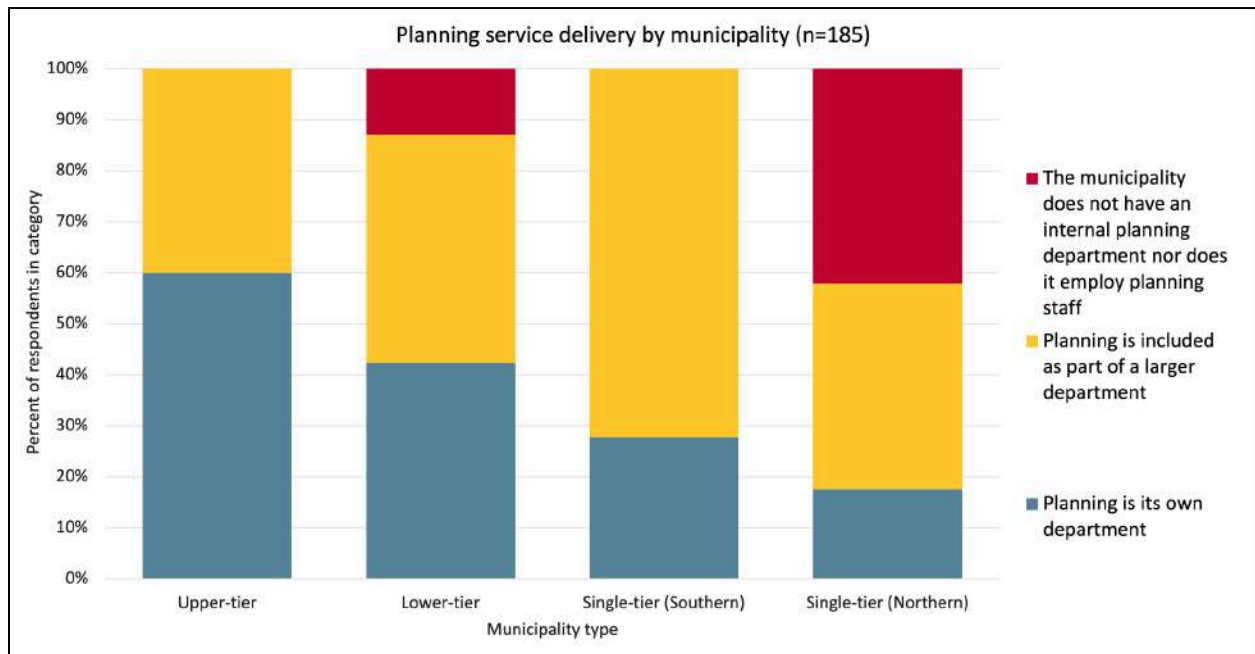


Figure 4.18 - Planner survey - Planning service delivery in municipalities with no planning department/staff

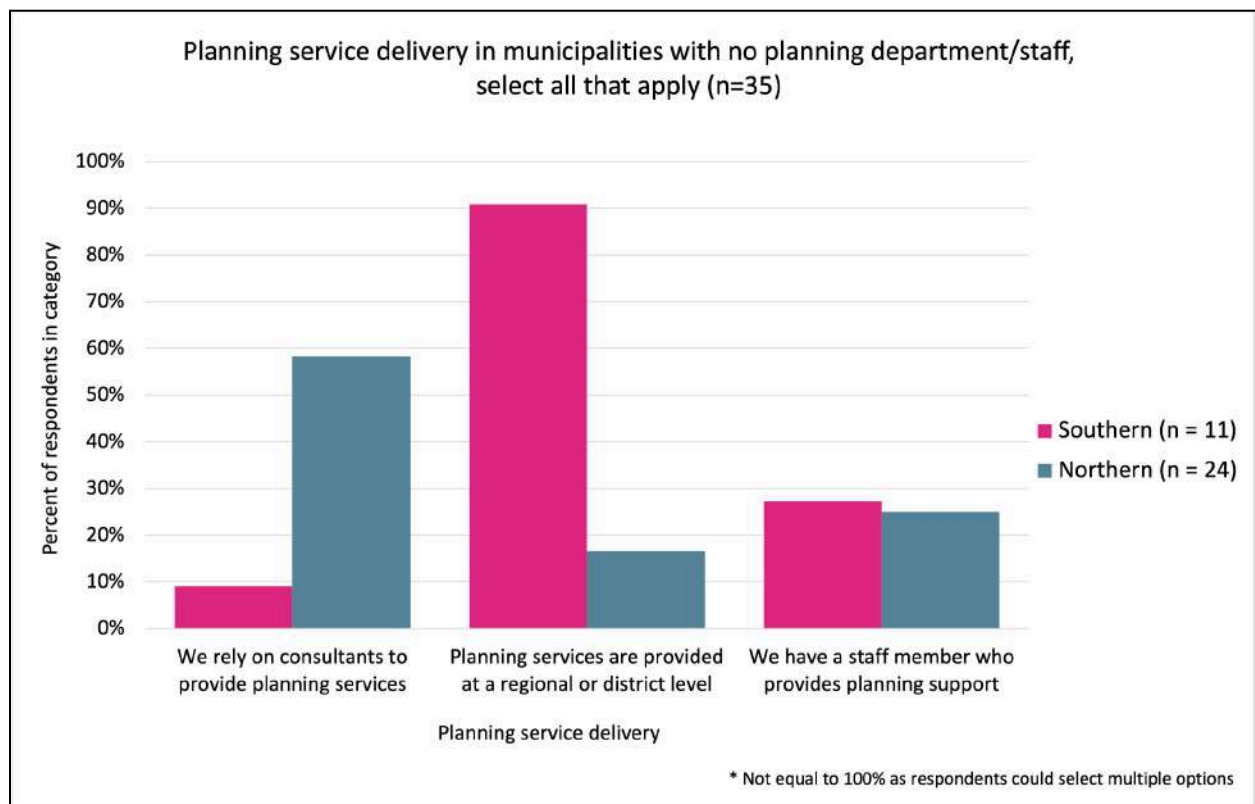
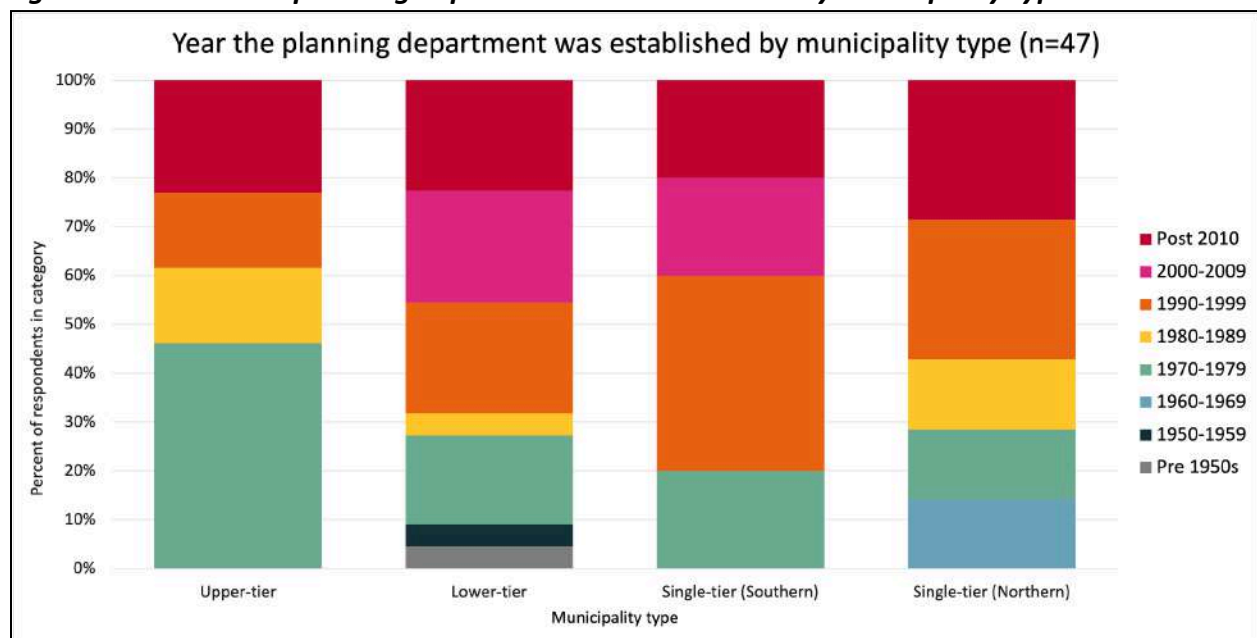


Figure 4.19 - Year the planning department was established by municipality type



4.5.1.2 Staffing levels and RPP

After determining whether a municipality has an established planning department and/or in-house planning staff, the next consideration is staffing levels. Tables 4.5 through 4.8 list the municipalities that reported the most and fewest planning staff for each municipality type (upper-tier, lower-tier, single-tier southern, single-tier northern municipalities). Other variables (e.g., population density, land area) have been included in these tables to provide context for each municipality.

A similar question was asked during the 2020 pilot study of 66 municipalities in Ontario's Greenbelt region . The numbers reported in this research are slightly different from the 2020 pilot study. Several factors may explain this, including differences in data collection periods. Furthermore, there could be differences as a result of departmental reorganization or variations in how respondents counted planning staff. For example, forestry staff within a planning department may or may not have been included.

Regardless of the exact numbers and their accuracy for individual municipalities, this data tells a story of varied capacity across Ontario in terms of staff resources and planning staff who are RPP. For example, Table 4.5 shows that urban upper-tier municipalities in central Ontario have reported as many as 32 planning staff, while those further from the GTA reported as few as 2

planning staff. This trend is similar for single-tier southern municipalities where the number of reported planning staff range from a single planner to planning departments with well over a dozen planners. For lower-tier municipalities and single-tier northern municipalities, some lack in-house planning staff, while others have large teams (i.e., more than 10 planners). In most cases, municipalities with higher staffing levels reported more complex approaches to planning service delivery and the ability to develop more specialized staff roles and in-house knowledge regarding agri-food systems (see Section 4.5.1.4).

Table 4.5 - Upper-tier municipalities with most and fewest planners

Municipality	Population (2021)	Land Area (km ²)	Population Density (2021)	Population Change (2016 - 2021)	Full-time Planners	RPP (Candidate and Full)	Urban-rural classification	MMAH MSO Region
Halton	596,637	966	617.8	9%	32	23	Urban	Central
York	1,173,103	1744	672.7	6%	28	23	Urban	Central
Durham	696,867	2519	276.7	8%	26	24	Urban	Central
Peel	1,451,022	1247	1163.2	5%	25	25	Urban	Central
Niagara	477,941	1853	258	7%	16	16	Urban	Central
Stormont Dundas Glengarry	66792	3236	20.6	2%	2	2	Rural	East
Leeds and Grenville	72493	3323	21.8	4%	2	2	Urban	East
Northumberland	88823	1895	46.9	4%	2	2	Urban	East
Essex County	192970	1657	116.4	6%	2	2	Urban	West
Haliburton	20571	4009	5.1	14%	2	2	Rural	East
Dufferin	66257	1487	44.6	7%	1	1	Urban	West

Table 4.6 - Lower-tier municipalities with most and fewest planners

Municipality	Population (2021)	Land Area (km ²)	Population Density (2021)	Population Change (2016 - 2021)	Full-time Planners	RPP (Candidate and Full)	Urban-rural classification	MMAH MSO Region
Vaughan	323103	272	1185.9	6%	42	38	Urban	Central
Brampton	656480	266	2469	11%	40	40	Urban	Central
Burlington	186948	186	1004.4	2%	26	19	Urban	Central
Caledon	76581	689	111.2	15%	20	18	Urban	Central
Whitby	138501	147	944.1	8%	16	(Blank)	Urban	Central
Edwardsburgh Cardinal	7505	310	24.2	6%	0	0	Rural	East
Greater Napanee	16879	462	36.5	6%	0	0	Rural	East
Addington Highlands	2534	1294	2	9%	0	0	Rural	East
Bayham	7096	245	29	-4%	0	0	Rural	West
Kincardine	12268	538	22.8	8%	0	0	Rural	West
Adjala-Tosorontio	10989	372	29.6	0%	0	(Blank)	Rural	Central
South Glengarry	13330	605	22	1%	0	1	Rural	East

Table 4.7 - Single-tier southern municipalities with most and fewest planners

Municipality	Population (2021)	Land Area (km ²)	Population Density (2021)	Population Change (2016 - 2021)	Full-time Planners	RPP (Candidate and Full)	Urban-rural classification	MMAH MSO Region
Hamilton (City)	569353	1118	509.1	6%	50	45	Urban	Central
Ottawa	1017449	2788	364.9	9%	35	0	Urban	East
Kingston	132485	452	293.4	7%	20	16	Urban	East
Kawartha Lakes	79247	3034	26.1	5%	14	6	Rural	East
Brant	39474	818	48.3	11%	11	11	Urban	West
Cornwall	47845	62	777.9	3%	3	3	Rural	East
Belleville	55071	247	222.8	9%	3	3	Urban	East
Stratford	33232	30	1107	6%	3	3	Rural	West
Brockville	22116	21	1057.8	3%	2	2	Rural	East
Gananoque	5383	7	768.4	4%	2	1	Rural	East
Smiths Falls	9254	10	958.1	5%	1	1	Rural	East
Pembroke	14364	14	1002.8	3%	1	1	Rural	East

Table 4.8 - Single-tier northern municipalities with most and fewest planners

Municipality	Population (2021)	Land Area (km ²)	Population Density (2021)	Population Change (2016 - 2021)	Full-time Planners	RPP (Candidate and Full)	Urban-rural classification	MMAH MSO Region
Greater Sudbury	166004	3186	52.1	3%	9	9	Urban	North
North Bay	52662	316	166.9	2%	4	4	Rural	North
Sault Ste. Marie	72051	222	324.6	-2%	4	4	Rural	North
Thunder Bay	108843	328	332.1	1%	4	4	Urban	North
The Archipelago	979	592	1.7	84%	2	2	Rural	North
Parry Sound	6879	13	524.9	7%	2	0	Rural	North
Timmins	41145	2955	13.9	-2%	2	1	Rural	North
Mattawa	1881	4	513.1	-6%	0	0	Rural	North
Burks Falls	957	3	310	-2%	0	0	Rural	North
Sables-Spanish Rivers	3237	801	4	2%	0	0	Rural	North
Neebing	2241	874	2.6	9%	0	0	Urban	North
Greenstone	4309	2727	1.6	-7%	0	0	Rural	North

4.5.1.3 Budget

The planner survey questionnaire also asked respondents to report on the budget of their planning department. This factor, to some extent, reflects planning department staffing levels and provides another measure of resources available to the municipality. Figures 4.20 and 4.21 depict the budget for planning services reported by respondents. As might be expected, upper-tier and single-tier southern municipalities more frequently reported larger budgets than single-tier northern and lower-tier municipalities. This trend corresponds to the fact that all upper-tier and single-tier southern municipalities reported having in-house planning staff.

It should be noted that several issues were identified with the data collected regarding municipal planning department budgets. Through the planner interview it became apparent that participants interpreted the question inconsistently. For example, some respondents included the budget for the larger department where planning was housed. Other respondents, discussed including municipal staff beyond the planning staff in the budget, or being unsure how to consider the budget associated with specific initiatives (e.g., an official plan or municipal comprehensive review may be a separate line item from the operational budget of the planning department). As a result, the functionality of this data is limited. That being said, this data does tell the story of widely variable municipal budgets for planning services, ranging from less than \$500,000 to over \$5 million. Furthermore, through the interview processes it became apparent that for smaller municipalities, primarily in northern Ontario, the budget for planning services could be well below \$100,000 (e.g., only the funds needed to retain a consultant to support a planning application on a case-by-case basis).

Through the interview process, respondents were asked to comment or elaborate on funding for agri-food systems planning related initiatives. The majority of respondents indicated that there were not specific funds related to agri-food systems planning initiatives in their municipality. Many respondents explained that their municipality was struggling to budget for existing and ongoing costs related to essential infrastructure and services, let alone take on new initiatives. One planner from western Ontario commented:

I am sure this is happening in every municipality across the province with the cost of inflation. For example, looking at what the cost is to repave a road, redo a culvert, rightly or wrongly, there tends not to be a lot of nice to have projects versus a lot of those really critical infrastructure pieces. (West, UT, Planner Interview)

In municipalities with larger staff complements, and larger operational budgets, some planners discussed being able to include agri-food systems planning work into the larger work plan of the municipality in the absence of a specific budget line item for agri-food systems planning initiatives. Several respondents mentioned collaborating with economic development and other agri-food organizations to secure funding for these “nice to have” initiatives. A planner from eastern Ontario explained:

As a county, or as local municipalities, we're not necessarily doing big capital projects. We're more facilitating and pointing people to the right direction, especially for agriculture. So much of it is federally and provincially regulated that we're more providing liaison and support and helping the small businesses that maybe don't fall under some of these larger organizations. (East, UT, Planner Interview)

In another instance, a planner from northern Ontario talked about having to be creative about how to secure funding for an initiative to update the municipality's mapping and aerial photography data. The planner explained that they were looking to cobble together funds from three sources: the municipalities budget, the Northern Ontario Heritage Fund Corporation (NOHFC), and private industry. They explained:

We're going to apply to the NOHFC as well, to see if we can get some funding from them to help offset our costs. We've also reached out to a few mining companies that operate within the municipality to see if they would be interested in providing funds to this project, because they've always asked for aerial photography of their operations. So if they could maybe put in a little bit of funds to help offset costs, then we would be able to give them access to aerial photography. (North, ST, Planner Interview)

There are also a handful of upper-tier and larger single-tier southern municipalities that have been more successful in securing long-term funding for agri-food related projects and plans

(e.g., agricultural strategies, tree planting programs, rural clean water programs, Alternative Land Use Services (ALUS) programs, and economic development related initiatives). These initiatives were largely joint initiatives between the planning department and another municipal department (e.g., economic development) or an outside organization (e.g., the local conservation authority), and were championed by both staff and elected officials.

Figure 4.20 - Planning budget by municipality type

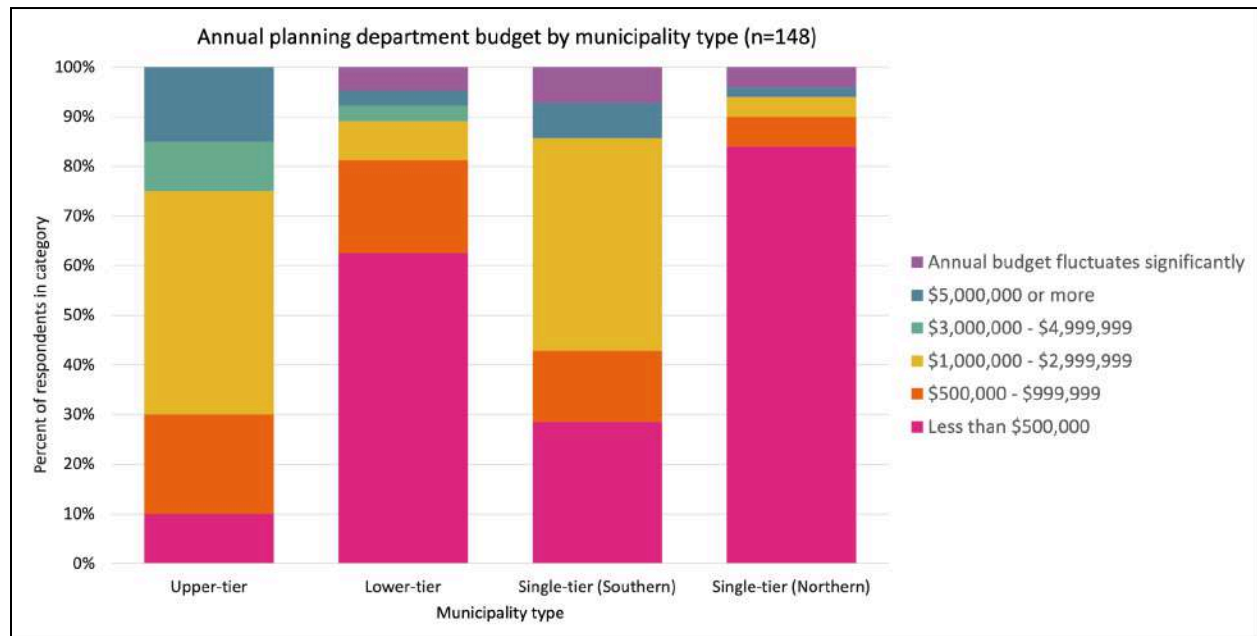
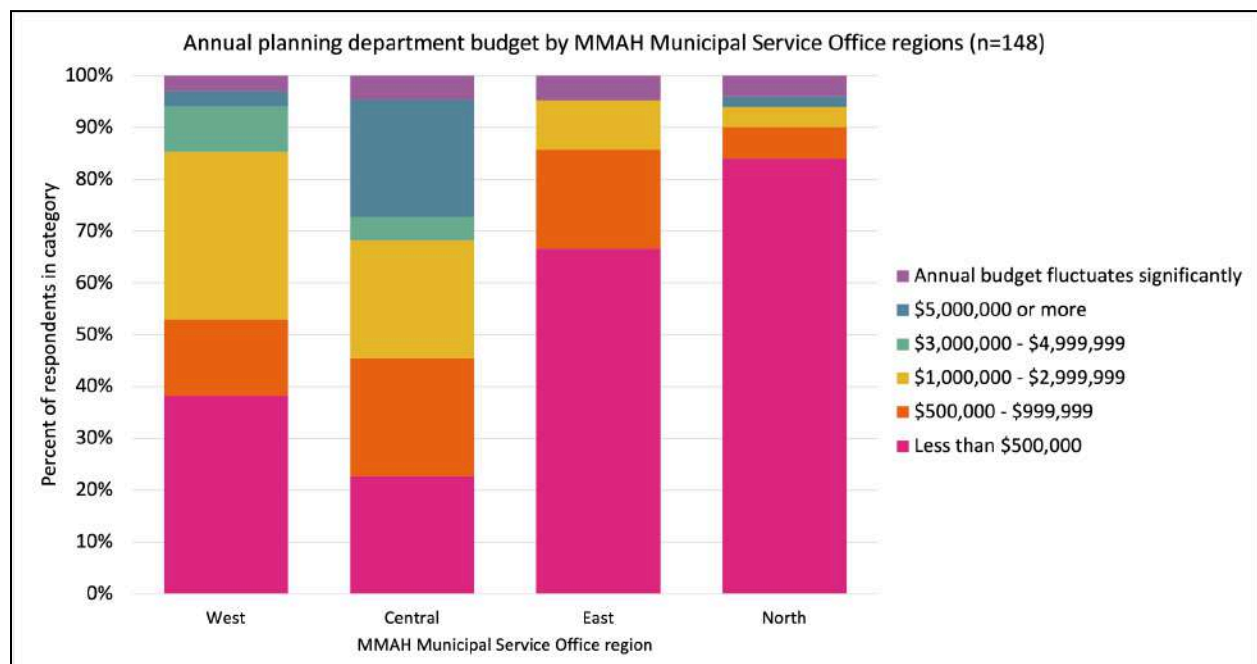


Figure 4.21 - Planning budget by MMAH Municipal Service Office regions



4.5.1.4 Planning service delivery approach

While Section 4.5.1.1 discussed some of the different municipal arrangements where planning services were included as part of a larger department, this section will focus on how planning work is divided among planning staff. Through both the planner survey and interviews, respondents were asked to discuss planning service delivery in their municipality, how planning work was divided among planning staff, and whether their municipality had staff dedicated to agri-food related priorities and issues.

As was mentioned previously (Sections 4.5.1.2 and 4.5.1.3), staffing levels and available resources influence the approach taken to divide workload between planning staff. For example, municipalities with larger planning staff complements are able to assign staff to specific types of planning work (e.g., development applications, zoning). Conversely, in municipalities with a moderate or limited planning staff complement, staff often need to work on a wider variety of planning files. Through the planner interview, respondents discussed multiple different ways planning work was divided among planning staff, which generally can be grouped into one of three planning service delivery approaches: generalists, division of work by planning topic, or

division of work by geography. These three categories are slightly different from those identified in the 2020 pilot study as a result of the expanded geography and additional data and insights.

Generalist planning service delivery describes an approach whereby individual planners within the municipality do not have specialized roles. In municipalities with this type of planning service delivery, planners carry out the full range of planning functions (e.g., policy, long-range planning, development planning) considering the complete spectrum of planning priorities (e.g., economic, social, environmental) across the entire geography of the municipality. This was the most commonly discussed approach to planning service delivery, and was particularly common for municipalities with fewer planning staff. This approach requires planning staff to be knowledgeable about both urban (e.g., streetscape design, active transportation, infill development) and rural planning (e.g., permitted uses, minimum distance separation, surplus farm dwelling severances, agricultural systems). Respondents who described their municipality as having a generalist planning service delivery often discussed a lack of specialized agri-food systems related knowledge on staff. Furthermore, some planners discussed challenges associated with consistency and coordination between planners who did not have the benefit of focusing on a smaller subset of planning work. The other limitation discussed by respondents related to generalist planning service delivery was the tendency for day-to-day planning work to take precedence over long-range planning or special projects that fall outside of what is typically considered 'core land use planning' work.

The most extreme version of generalist planning service delivery is where the staff person who is dedicated to planning services is also carrying out other duties and roles at the municipality. This was common in smaller northern Ontario municipalities where respondents often talked about "wearing multiple hats" or having to handle other roles and responsibilities in addition to providing planning services. For example, one respondent explained: "I handle planning. I am the chief building official. Also the building inspector. I handle bylaws, and I handle property standards, among many, many other duties as assigned" (North, ST, Planner Interview). Another respondent explained:

I am the CAO-clerk, so I wear a lot of hats. We are a very small, rural municipality. ... I do a bit of planning, I am the zoning administrator. I do whatever economic development

opportunities come up. I oversee the staff, we have three in the office, two in the works, roads department, two landfill attendants. You know that kind of a structure. Pretty sparse. (North, ST, Planner Interview)

In municipalities where planning staff had multiple roles, limited resources, knowledge, and experience were key barriers to agri-food systems planning.

The second type of planning service delivery model that was discussed by respondents is based on the **division of work by planning topic**. In this department structure, staff complements are organized into smaller teams or more specialized roles based on subject area (e.g., urban design, housing, climate change). This planning service delivery approach was also relatively common, with “development planning” and “policy planning” (sometimes referred to as long-range planning) being the two most common topic areas. As one planner from northern Ontario explained: “In a lot of municipalities, they separate development planning and policy planning” (North, ST, Planner Interview). In this approach to planning service delivery, agri-food systems work was either shared between staff whose portfolios intersected with agri-food systems planning (more common) or assigned to a dedicated individual (less common). While the division of work by planning topic allows for more specialized roles and in-depth knowledge regarding specific subject areas, it is still possible that certain roles have more exposure to agri-food systems planning than others. A planner in central Ontario reflected on the differing levels of knowledge between their policy and development planning staff:

You are talking to a group of policy planners here [as part of this interview]. But it's the development planners who are dealing with actual applications. And they may not have as much knowledge about agriculture, agricultural issues, and agricultural policy.

(Central, UT, Planner Interview)

There were only a handful of municipalities that had a **staff person dedicated to agriculture or food systems planning**. Municipalities that had this specialized role were primarily large single- and upper-tier municipalities in southern Ontario that had a significant agricultural land base and were also facing significant growth pressures. Of the municipalities that reported having an agri-food related specialist on staff, there was some variation in what was included as part of

this role (e.g., climate change, sustainable development, waste management, natural heritage). In some cases the staff member specialized in agri-food systems was shared between the planning and economic development departments (e.g., planning - economic development liaison or agricultural development officer). The agri-food systems specialist role often included a significant portfolio related to relationship building, including work with agricultural advisory committees, food policy groups, federations of agriculture, conservation authorities, and other local agri-food organizations (e.g., Greater Golden Horseshoe Food and Farm Alliance). Municipalities that had a specific agri-food related role reported benefiting from additional knowledge and review related to agricultural land use policies, normal farm practices, MDS, nutrient management, soil and crop health, and economic development initiatives, among others.

The third planning service delivery approach identified by respondents is based on **geographic divisions**. In this approach to planning service delivery, staff are assigned either a geographic area or a specific spatial typology (e.g., urban or rural) within the municipality. This planning service delivery approach was less common than generalist or division of work by planning topic, and was most common among large single-tier and upper-tier municipalities in southern Ontario. A planner from eastern Ontario described the approach in their municipality:

I would describe us as a southern municipality with a large agricultural base. And we have assigned each of our planners specific lower-tier municipalities. So, most of them have experience dealing with applications or proposals where they are applying MDS, prime agricultural policies and those types of things. (East, UT, Planner Interview)

Similar to the generalist planning service delivery, the division of planning work by geographic area often results in planners having to be aware of the full range of planning issues, topics, and approaches applicable to their geography. A respondent from western Ontario described their municipality's shift from a subject-based workload division to assigning economic development staff specific geographic areas:

There's some strengths and weaknesses to both models. Previously you had one person who specialized in agriculture. That was their area of expertise, and they were in high

demand all across the wide geographical area of the municipality. In contrast, with geographically-based work each individual operates in a smaller geographic area, but they must now become knowledgeable in the wide variety of activity that occurs within their geographical region. (West, ST, Planner Interview)

Some municipalities used a hybrid approach, dividing work by both geography and topic area. For example, a planner from a large single-tier municipality in central Ontario explained that their planning department was divided into three smaller teams - rural development, urban development, and policy planning. The planner explained:

The municipality has urban, suburban and rural areas. And within that rural area, obviously, we have a significant agricultural land base. We're also doing long range policy work affecting both the urban and the rural area, updating our natural heritage inventory, as well as the ongoing work in terms of the agricultural economy, and helping to deal with issues relating to our food and agriculture action plan. (Central, ST, Planner Interview)

Respondents were also asked to report on the number of planning staff in their municipality substantially dedicated to agriculture. Figures 4.22 and 4.23 depict the number of planning staff substantially dedicated to agriculture by municipality type and MMAH Municipal Service Office Regions respectively. Interview data confirmed that large single- and upper-tier municipalities in western and central Ontario most often had higher numbers of staff dedicated to agri-food systems planning.

Figure 4.22 - Planning staff substantially dedicated to agriculture by municipality type

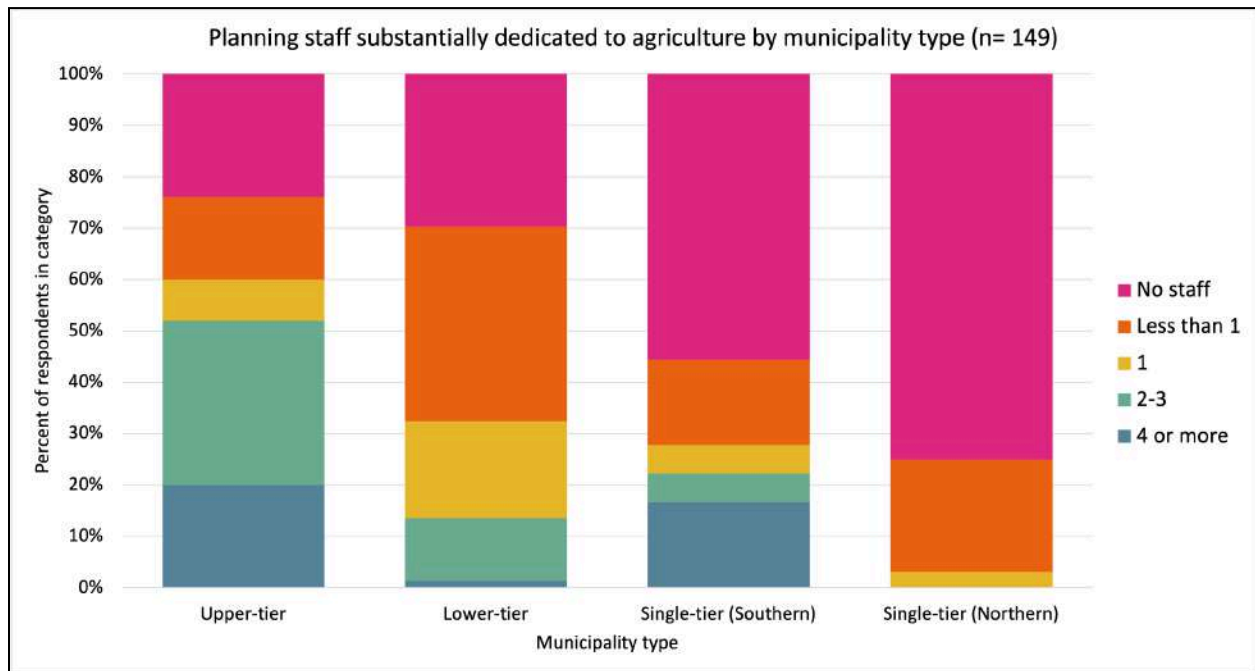
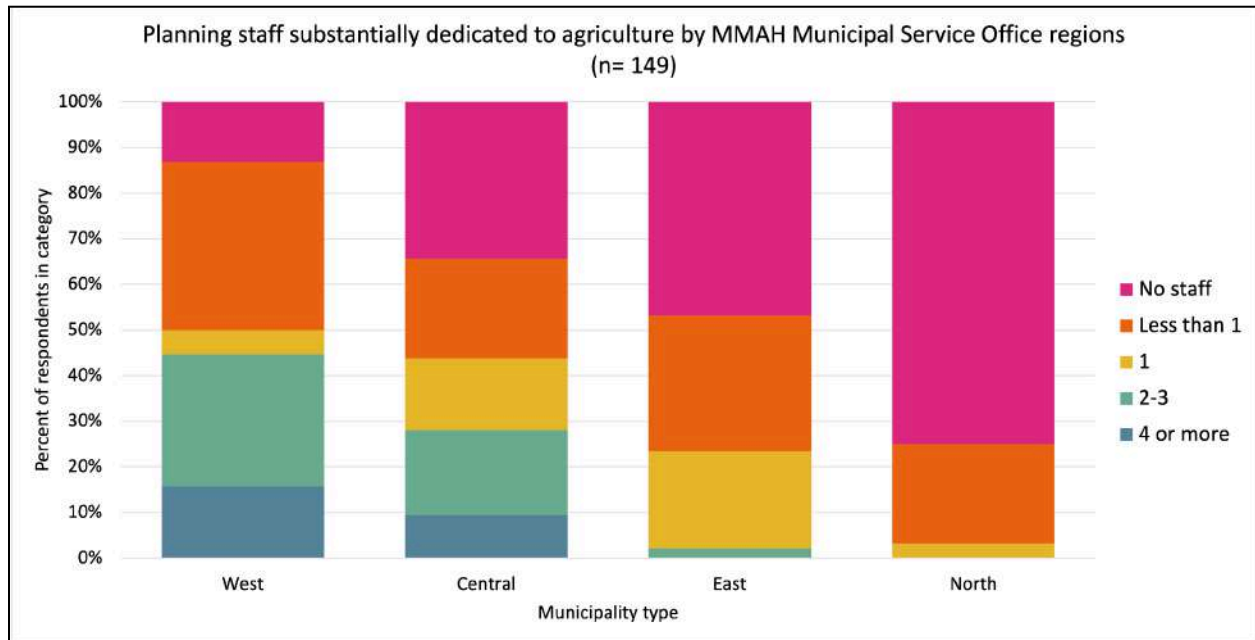


Figure 4.23 - Planning staff substantially dedicated to agriculture by MMAH Municipal Service Office regions



4.5.1.5 Staff retention and hiring

Respondents also identified staff retention and hiring as a major challenge affecting planning department structure and personnel. Many municipalities across Ontario reported high rates of staff turnover and challenges filling vacant positions. A planner from western Ontario explained:

I've been here for two and a half years and I'm the longest standing employee in the department. When I started there were four of us and it was a two-tier service model. So it was two people at the upper-tier and two people at the lower-tiers that were the local planners for zoning, minor variances, and site plan. And then the upper-tier planners did official plan amendments, consents, part lot control, subdivision, and condos. And we launched a single-tier service model in March of 2021. And then started growing the team a little bit. But we have had a lot of staff turnover as well. In two and a half years, I've hired 14 people and I currently have nine staff. (West, UT, Planner Interview)

The challenge of hiring and retaining planning staff is something that both planners and elected officials commented on. An elected official from eastern Ontario explained that their municipality has a “very small planning department with one junior planner and we are presently unable to fill the position” (East, LT, Elected Official Survey). In another instance a planner from central Ontario explained:

We are currently experiencing long-term staff shortages in the planning department associated with rural planning, this requires staff associated with agriculture planning to carry several significant portfolios at the same time, including those with competing interests (for example aggregates and environmental protection). (Central, LT, Planner Survey)

Several other respondents commented on the ways staff retention and hiring challenges were impacting work related to agri-food systems planning. In addition to planning staff needing to carry several significant portfolios at the same time, it was acknowledged that challenges with hiring and retention also meant that planning staff were so focused on keeping up with the day-to-day planning activities (e.g., processing development applications) that they were unable

to undertake important long-range planning activities. A planner from western Ontario explained:

Agriculture is extremely important but planning applications such as subdivisions take up most of the time of staff. Planning applications have legislated requirements (i.e., timelines where refunds need to be issued for non-completion) so these take priority over agriculture issues. If agricultural extension was a legislated priority (both provincially and municipally) and backed up by legislative requirements, then more time would be spent on these issues. Right now, rural extension takes a back seat to urban development. (West, LT, Planner Survey)

4.5.1.6 Role of consultants

The final factor influencing planning department structure and personnel is the role of planning consultants. Similar to the widely variable nature of planning service delivery models, the role of planning consultants in providing municipal planning services varied from municipality to municipality. Figure 4.24 depicts the reliance on planning consultants by municipality type for municipalities that have a planning department or planning staff as part of a larger department. The majority of municipalities across Ontario (over 90% of the 185 municipalities that participated in the planner survey) indicated relying on planning consultants to some extent. The role of planning consultants ranged from providing support for day-to-day planning activities (e.g., processing development applications), leading large municipality-wide projects (e.g., municipal comprehensive review), or providing expertise on specific file types (e.g., peer review for supporting studies, including agricultural impact assessments).

Northern Ontario municipalities have increasingly shifted from in-house planning services to relying on consultants due to the growing complexity of Ontario's land use planning framework. One respondent explained how the role of planning consultants in northern Ontario has changed over the years:

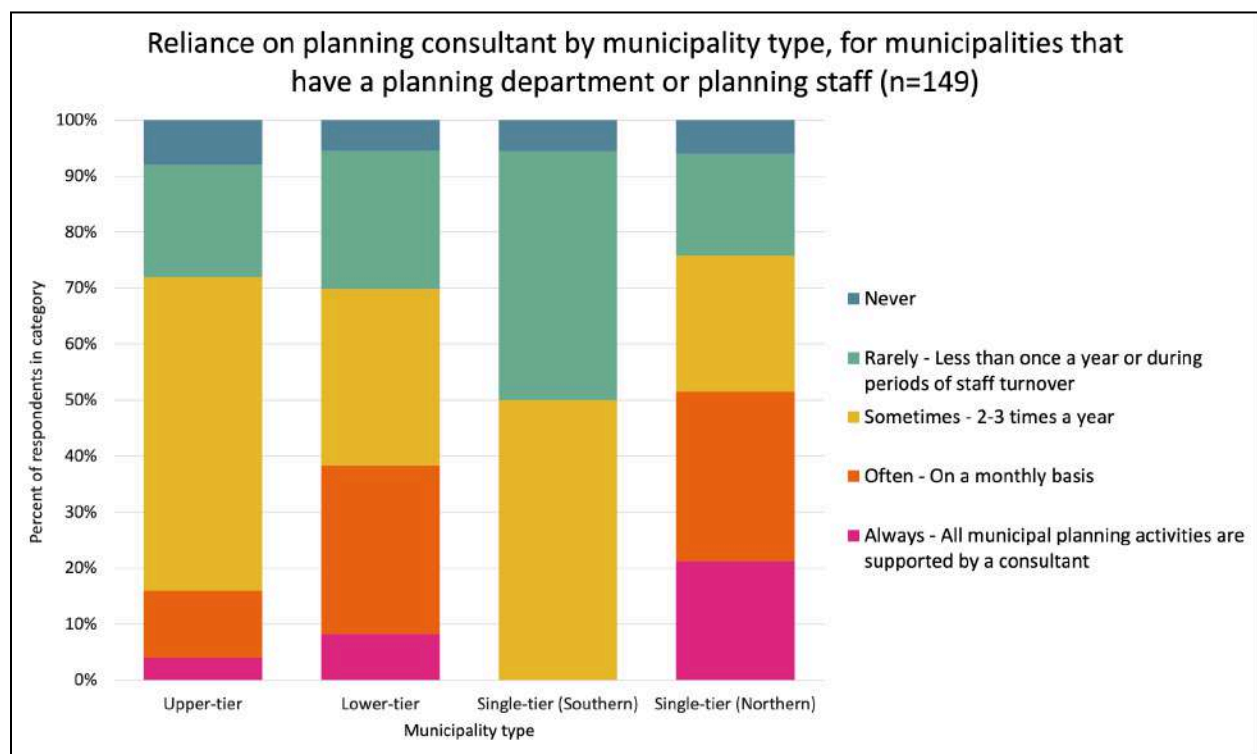
So my position [CAO-clerk] would be basically in charge of planning in a small municipality. We don't have a separate planning department but we do have a planning consultant on retainer. I didn't have that in my previous municipality, and we didn't have

that here prior to 2016. We used to do things on our own. But planning in my opinion is becoming more complex. There are a lot more appeals to the OLT. And you wouldn't be doing your residents any favors by writing the reports yourself. You're not an expert.

(North, ST, Planner Interview)

Another respondent from northern Ontario shared a similar experience, where historically planning services were provided by the chief building official but with staff turnover there was the realization that “we would be better served by having outside planning consultants handling planning applications, just to ensure that we're in conformity with the Planning Act and our own policies as well” (North, ST, Planner Interview).

Figure 4.24 - Reliance on planning consultant by municipality type, for municipalities that have a planning department or planning staff



Across Ontario, respondents discussed the growing involvement of planning consultants in the delivery of municipal planning services. While a variety of explanations for this trend were provided, the most common reasons include staff shortages and turnover, the number of legislative changes to the planning framework in recent years, and workloads associated with increasing development activity. In light of the growing role for planning consultants in

municipal land use planning, it is prudent to acknowledge that several respondents discussed challenges with planning consultants lacking local or contextual knowledge. For example, a respondent from northern Ontario discussed switching between consultants to find someone that “was more local, it's still a few hours away, but relatively more local” (North, ST, Planner Interview). A similar sentiment was shared by a respondent who explained working with a planning consultant who had a different vision for the municipality than in-house staff:

I've had a relationship with our planning consultant now for the last three years working here. I know how their head works, and it's not necessarily the way I think the municipality should be going. ... But if I start fresh with a brand new planner, even if they are more local there is a chance we will still butt heads. Like I said, the surrounding municipalities are just go, go, go. And we're like, whoa, this is not this is not what we want as a community. (North, ST, Planner Interview)

Respondents from southern Ontario municipalities were less likely to express concerns about consultants lacking local knowledge. However, some planners highlighted challenges in finding consultants without conflicts of interest and noted instances where consultants reused policy language across multiple municipalities. A respondent from western Ontario emphasized the advantages of handling planning work in-house highlighting stronger local knowledge and greater control over policy development:

I think something that we do probably more than some other areas is undertaking projects in-house with our own staff resources. Especially our official plan updates and policy updates. If I feel like we have a lot of local knowledge and we are the ones that need to implement it in the end. So there's benefit in having our own staff do that work. (West, UT, Planner Interview)

4.5.2 Relationships with other municipal departments and external actors

The second theme or group of factors related to municipal agri-food systems planning capacity includes consideration for the relationship between planning departments and other groups such as other municipal departments and external organizations. The most frequently discussed relationship was that between municipal planning and economic development staff.

Additionally, respondents discussed working with other municipal departments (e.g., infrastructure, building services, public health), other municipalities (e.g., neighbouring municipalities), agri-food systems stakeholders (e.g., agricultural advisory committees), and external organizations (e.g., research institutions). A respondent from eastern Ontario emphasized the importance of relationships building in rural contexts:

In rural planning, who you are, and how you treat people, establishes your credibility. In the rural context, there are many people that go through the planning process that do it only once in their entire life. ... So you have to be approachable, and you have to be out in the field. (East, UT, Planner Interview)

4.5.2.1 Planning and economic development

Respondents frequently highlighted the relationship between planning and economic development as crucial to municipal agri-food systems planning. More specifically, respondents acknowledged the different but complementary work contexts for planning and economic development staff in relation to agri-food systems and emphasized the need to coordinate efforts. In considering the roles of planning and economic development one respondent explained:

Primary agricultural production, value-added operations, and the various support industries associated with agriculture are really within the purview of economic development. And then what planning does is provide a land use policy planning regime that is conducive to various forms of agricultural activities. (West, ST, Planner Interview)

Another planner explained: “We [planning] have the policy base, and then economic development has the education and tourism components” (West, ST, Planner Interview). Similar sentiments were shared by a number of respondents who also noted the important “boots on the ground” knowledge that economic development staff were often able to share with their planning counterparts.

The arrangement between planning and economic development staff varied across the province and ranged from a formalized working relationship (e.g., being located within the same department), to substantial coordination efforts (e.g., having a planning-economic development

liaison staff role, regular joint meetings, offering coordinated services through a “one-window” approach), to more informal working relationship (e.g., inconsistent check-ins). A planner from western Ontario explained that in their municipality “the planning division and economic development division were deliberately placed under the same community development department. So you have community development and within that you have economic development, planning services, building, and then you have community attraction and promotion” (West, ST, Planner Interview). Similarly a planner from central Ontario commented that in their municipality “planning and development are considered a singular team, we all report in through the chief planner, and particularly on the agriculture and agri-food front, we are hand and glove” (Central, UT, Planner Interview).

Regardless of whether planning and economic development fall under the same department, planners across Ontario emphasized the need for close coordination. A common sentiment was the idea that planning and economic development should be rowing in the same direction. In fact, in some municipalities this coordination was so well established that planning staff would ask if their economic development counterpart could participate in the planner interview as well. A planner from western Ontario provided an example of planning and economic development coordination, explaining:

There has always been that recognition that planning and economic development need to be rowing in the same direction. So, we've tried as much as possible to partner on projects, or keep each other informed. We have a standing monthly meeting where economic development and planning meet, just to discuss - hey, this is what we've got on our work plan... this is what you've got on yours. We also have an economic development and planning advisory committee, which I think will see changes in the future. But yeah, there's just always been this recognition that it's not us or them. We are working on things together. (West, UT, Planner Interview)

A similar sentiment was shared by a planner from central Ontario:

We are in the same boat rowing in the same direction - we have a good relationship. Economic development can bring issues to us and then we can determine if we need to

change things. Or conversely, if they're hearing things, we can help inform them, and then they can provide an informed response. We work together collectively in resolving or addressing issues. (Central, ST, Planner Interview)

Stronger working relationships between planning and economic development staff were reported to have numerous benefits for agri-food systems planning capacity, including a more coordinated municipal response, greater awareness for the ranges of issues and challenges facing the agri-food sector, reduced processing time associated with agri-food system proposals and requests, and increased support for shared planning and economic development agri-food systems initiatives.

However, not all respondents reported strong working relationships between planning and economic development and in many municipalities, concerted effort was required to establish and maintain coordination, particularly related to agri-food systems. A respondent from western Ontario explained: “Economic development officers and planners have different mandates. One says no and the other one says yes, and then we have to work together to figure things out” (West, ST, Planner Interview). This tension between planning and economic development was shared by a handful of other planners (primarily in southern Ontario) who often referenced economic development opportunities in prime agricultural areas as being a point of contention. For example, one planner from eastern Ontario discussed:

There's been lots of economic development stuff out in a rural area that we know nothing about. And then we find out later on, that they don't have the correct zoning, or they need to go through site plan. Or maybe they need a severance, or a minor variance application to make it work. And planning is the last one to know and we didn't have the opportunity to provide any guidance on how to make that work. (East, ST, Planner Interview)

Another planner reflected on the changing relationship between planning and economic development and the coordination needed related to on-farm diversified uses:

We [planning and economic development] are starting to work together a lot more, especially with on-farm diversified uses. We sort of have conflicting mandates, but we

try to make it work, and get to a place where the business that's proposed could work in some way, shape, or form. So that's been really good. But it's my understanding that there was no previous relationship really between planning and economic development. Almost animosity, perhaps. Like just not working together. (West, UT, Planner Interview)

It should be noted that not all municipalities provided economic development services in-house. In municipalities where economic development services were being provided by an outside organization (e.g, economic development partnership) several respondents commented on a lack of coordination and information sharing regarding work related to the agri-food system. For example, a respondent from a municipality where economic development was provided by a third party commented: "I don't get the impression off the top of my head that the [local economic development corporation] is prioritizing agriculture. Most of the economic development initiatives that I am aware of are related to manufacturing and industry" (West, UT, Planner Interview). A similar comment was made by a respondent from central Ontario who reported that their local economic development corporation was focused on "more traditional industry and business that is non-agricultural related" (Central, UT, Planner Interview).

4.5.2.2 Other municipal departments

In addition to working with economic development staff, respondents discussed other municipal departments that they coordinated with on agri-food systems planning work. Agri-food systems planning overlaps with the work program and service areas of multiple municipal departments, and respondents frequently discussed working with the building department, transportation staff, public health, GIS, forestry, and climate change staff. A respondent from central Ontario reflected on the multifaceted nature of agri-food systems:

Because food and agriculture touches on so many spaces, we've worked with public health, social and community services, economic development, the roads department, food inspection, and public works. We communicate with a lot of other departments. And quite often if they're doing something related to food or agriculture, they'll connect with our department because they know that expertise is there. So I'd say we're pretty active across the organization from that standpoint. (Central, UT, Planner Interview)

The nature of agri-food systems work is that it draws on and relates to a number of different municipal services areas. Planning staff are well positioned to connect different areas of agri-food system planning work and are already familiar with coordinating work between multiple municipal departments (e.g., building, engineering, economic development) and external organizations. As part of this, some respondents discussed working with other municipal staff to find areas where priorities and mandates align to help coordinate agri-food systems planning efforts. A planner in central Ontario reflected that in their municipality one of the most important roles that planning staff played related to agri-food systems planning is “constantly consulting with each other to make sure that we’re relaying one message” (York Region, Planner Interview).

4.5.2.3 Other municipalities

Beyond internal municipal relationships, respondents emphasized the importance of inter-municipal collaboration, including networking with neighboring municipalities, coordinating between lower- and upper-tier governments, establishing regional networks, and identifying 'sibling municipalities' with shared characteristics. Relationships with neighbouring municipalities were often discussed in the context of wanting to support critical connections and interactions that occur between urban centres and surrounding agricultural areas. Respondents from urban single-tier municipalities were most likely to discuss this type of inter-municipal relationships. For example, one respondent explained: “As a single-tier urban municipality surrounded entirely by townships with an agricultural economy, we must work cooperatively to ensure urban-rural differences are respected” (West, ST, Elected Official Survey). Similarly a respondent from eastern Ontario commented: “There is a real opportunity for communities such as ours that are urbanized but surrounded by agricultural areas to really integrate ourselves within that economy and provide manufacturing, processing, and servicing support to the agricultural sector” (East, ST, Planner Interview). Some planners also highlighted the need for consistent planning approaches and initiatives across municipal boundaries to ensure cohesive development and policy implementation.

Another type of inter-municipal relationship that was frequently discussed was that between upper- and lower-tier municipalities. Several respondents discussed the role of upper-tier

municipalities in supporting or guiding lower-tier planning activities. Particularly in central Ontario, planners from upper-tier municipalities often discussed their municipality's role in coordination and providing education regarding agri-food system planning. For example one respondent explained:

We've recently put together an agriculture economic development and planning working group. So we had a training session back in June, where we had presentations on what agriculture looks like in the Region, planning gave a presentation on the agricultural systems mapping that's going to be incorporated into the Official Plan, and then an agriculture economic development 101. So we try to lead initiatives like that, where we can bring in our local area municipalities, even building departments, including building officials and engineers, just to talk about how to work with agricultural partners and what things look like from an agricultural perspective. (Central, UT, Planner Interview)

Another respondent from central Ontario discussed a similar initiative where all planning staff from both the upper- and lower-tier municipalities would meet to discuss planning projects, trends, and issues:

Right now there's a lot of discussion about the Regional Official Plan. And so we educate and inform the local municipalities on the work that we're doing. And we get feedback from the local municipalities based on their experience from their local areas. (Central, UT, Planner Interview)

A two-tier municipal planning system offers several benefits. Upper-tier municipalities often provide specialized expertise in agri-food systems, coordinate lower-tier planning efforts, and create opportunities to integrate regional and local perspectives. Additionally, they enhance the capacity to undertake special initiatives and projects. A respondent from a lower-tier municipality in eastern Ontario explained that they rely on the upper-tier municipality to provide support as a result of staffing limitations, shorter timelines, and increased volume of work, and commented: "We definitely have to lean into the upper-tier but even that level is experiencing capacity issues" (East, LT, Planner Interview). While many respondents in municipalities with a two-tier municipal government structure discussed the benefits, there

were a handful of respondents who discussed challenges with this model, including the potential for conflicting opinions, longer processing times as a result of multiple levels of oversight, and confusion from the public about the planning process and the roles of the lower-tier and upper-tier municipality. A central Ontario planner reflected on these challenges:

The number one comment I hear from farmers is their challenges with the development approvals process. And I think that's exasperated with the two tier system. So I have been trying to build relationships with our local area municipalities, so that we can support an agricultural perspective. But it is really a challenge. ... I don't know if this exists in other regions, but I definitely feel it here - the sense that we don't want the Region treading on our territory. I find that difficult to navigate as an upper-tier municipality. (Central, UT, Planner Interview)

Another key inter-municipal relationship identified was the concept of 'sibling municipalities' – municipalities with similar demographic, geographic, or economic characteristics. Respondents noted that these relationships help create a professional network where municipalities can share best practices and collaborate on common challenges."

4.5.2.4 Agri-food stakeholders

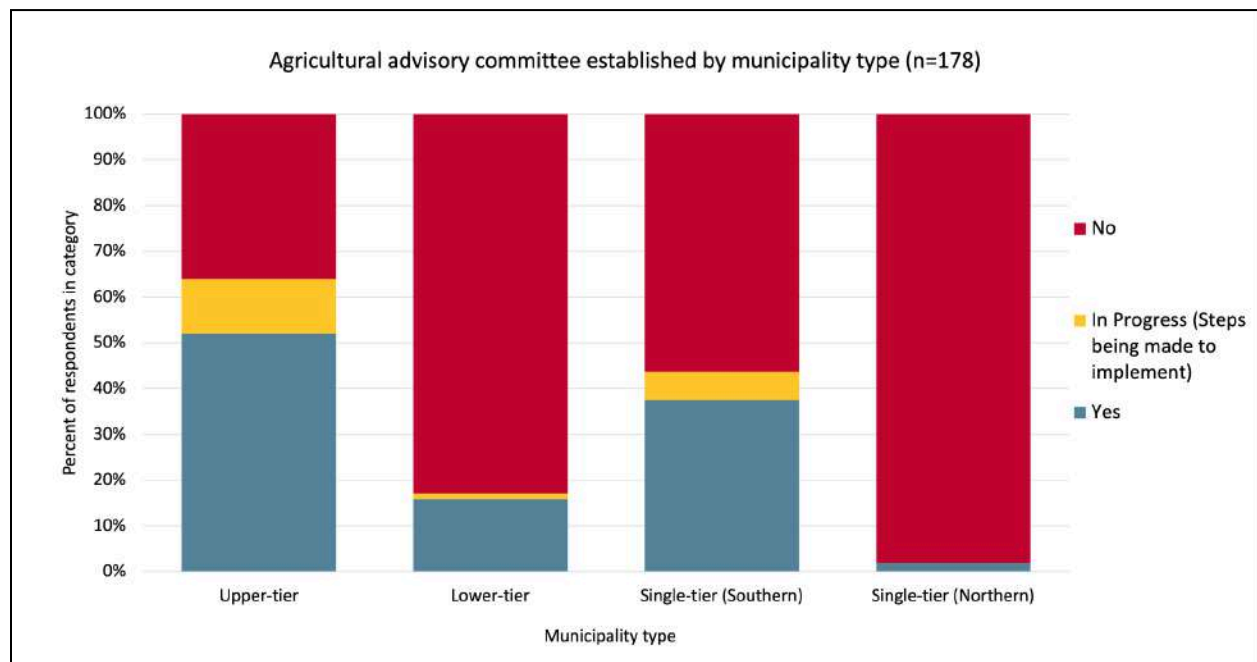
Respondents also talked about the importance of relationships with agricultural and food systems stakeholders in contributing to their capacity related to municipal agri-food systems planning. Agricultural and food systems stakeholders identified by respondents included: agricultural advisory committees, local federations of agriculture, local food policy group, the Ontario Federation of Agriculture (OFA), Northern Ontario Farm Innovation Alliance (NOFIA), and Golden Horseshoe Food and Farming Alliance (GHFFA), Rural Agri-Innovation Network (RAIN), among others. These relationships with the local agri-food sector have benefits for capacity including building shared knowledge and understanding between municipal staff/council and agri-food stakeholders, increased engagement in planning processes, and shared ownership for municipal initiatives.

While many respondents discussed the benefits of engaging with agri-food systems stakeholders, several also acknowledged challenges in understanding how best to support the

agri-food sector. For example, one respondent from western Ontario identified “conflicting priorities and diverse needs of the agricultural industry” as being a key challenge in agri-food systems planning and decision making (West, LT, Elected Official Survey). Another respondent reflected: “Farmers are a hard group and I find that in a lot of municipalities, they can create more work than is required or needed” (West, ST, Planner Interview). Municipalities with agri-food systems planning expertise on staff were less likely to comment on challenges around understanding how to best support and respond. However, for municipalities that did not have a staff person dedicated to agri-food systems planning, opportunities to engage with and learn about the agri-food sector were critical to building staff knowledge. Relationships with agri-food organizations that respondents identified include formal committees, site visits, providing staff resources, and informal conversations with individuals involved in the sector. Respondents also discussed that municipal attendance at key agri-food events played an important role in both keeping municipal staff informed and building relationships.

As part of this research, respondents were asked if their municipality had an Agricultural Advisory Committee (AAC). A number of municipalities across Ontario have established Agricultural Advisory Committees and while their formal structure varies from one municipality to the next, the general intent of AACs is to provide advice to municipal council on agricultural issues, support partnerships to advance strategic planning, and to provide a forum where agri-food systems issues and initiatives can be identified and discussed. Figure 4.25 outlines the proportion of municipalities within each municipality type that reported having an Agricultural Advisory Committee, as reported through the planner survey questionnaire. This figure shows that a greater portion of upper- and single-tier municipalities in southern Ontario reported having an Agricultural Advisory Committee or being in the process of establishing one. In total, respondents indicated 33 municipalities that have an AAC and 5 municipalities that are in the process of establishing one.

Figure 4.25 - Agricultural advisory committee established by municipality type (n=178)



Through the planner interview, respondents from municipalities with an established AAC often discussed the benefits of this working relationship. For example, a planner from central Ontario explained: “We have a pretty close working relationship with the agricultural advisory committee with economic development. There's a pretty good understanding that we do our best to support that industry” (Central, UT, Planner Interview). Another respondent reflected that prior to the establishment of their AAC the way municipal staff worked with the agri-food sector was siloed - with the planning department largely speaking with large-scale commodity producers, and the economic development team mostly working with local food and farm-to-fork businesses. The respondent commented: “Now we are really making an effort to speak to the whole value chain. And in large part, we are doing that through having established an Agricultural Advisory Committee that has representatives that really are as diverse as the community” (West, UT, Planner Interview). In this context, municipal Agricultural Advisory Committees play an important role in building trust between municipal staff and the local agri-food sector as well as providing municipal staff with more knowledge regarding the issues and priorities of the sector. Respondents also acknowledge the important role of AAC (or similar) in providing feedback on planning initiatives, identifying key areas where work should

be undertaken, and building understanding with the agri-food sector regarding the role of land use planning. For example, a respondent from central Ontario explained an initiative they were working closely with their AAC on:

Right now, we're working on our municipal comprehensive review and from an agricultural perspective, we have to implement the Provincial agricultural system map into our Official Plan. But we have an opportunity to refine it. And in order to make sure it's correct, we have and will continue to engage the agricultural advisory committee pretty robustly. We have to do our best to get them on board. They're an important stakeholder resource for us to be able to reach out to. (Central, UT, Planner Interview)

It's also important to note that through the planner interview process, respondents were able to clarify that in some cases planning staff were not engaging the agricultural advisory committee or in some cases indicate that the AAC is not as active as it had been in the past. One respondent reflected on the importance of defining the scope and role of the AAC:

We had an agricultural community committee, but unfortunately, it kind of petered out. And while there is a desire to re-engage it, there is also concern that it would become more work than it would ever have a purpose for. So we're trying to figure that out. If we're going to re-establish it, what is its purpose? What will it achieve? (West, UT, Planner Interview)

Another respondent reported a similar situation in their municipality where the Agricultural Advisory Committee was discontinued as a result of “staff turnover and a lack of interest” (Central, LT, Planner Survey).

4.5.2.5 Other organizations

The final type of relationship discussed by respondents was between planning staff and other external organizations. These include conservation authorities, agri-food adjacent groups (e.g., the Greenbelt Foundation, Northern Ontario Heritage Fund Corporation (NOHFC), Alternative Land Use Services (ALUS)), professional bodies (e.g., Ontario Professional Planners Institute (OPPI), Canadian Institute of Planners (CIP)), research institutions (e.g., University of Guelph, Rural Agri-Innovation Network (RAIN)), professional networks, and the public—all of which

contribute to agri-food systems planning capacity. These relationships were acknowledged as providing several benefits, including: education and learning opportunities related to the agri-food sector, identifying and providing feedback on municipal agri-food systems planning approaches, discussing shared challenges and approaches that have been taken by other municipalities across Ontario, undertaking research and providing evidence to support the decision-making process, and establishing partnerships for the creation and delivery of agri-food systems planning initiatives. One of the most commonly discussed partnerships was that between municipalities and conservation authorities in establishing, funding and delivering rural clean water programs. Rural clean water programs provide financial and technical assistance to farmers implementing projects to improve and protect water quality - such as tree planting, fencing to keep livestock out of watercourses, and upgrading manure storage facilities - thereby promoting both agricultural productivity and environmental sustainability.

4.5.3 The land use planning framework in Ontario

The third group of factors influencing municipal agri-food systems planning capacity focuses on Ontario's land use planning framework, including the role of municipal councils and the Provincial government. While these factors are largely beyond the control of municipal planning departments, they have the ability to impact municipal agri-food systems planning capacity due to the hierarchical nature of land use planning in Ontario. Municipal councils and the Provincial government serve as approval authorities for land use planning in Ontario and shape the framework that guides agri-food systems planning. This section will include insights regarding municipal council activities related to agri-food systems, the background and knowledge of elected officials, factors influencing decision making at the local level, and the role of the Provincial government.

4.5.3.1 Municipal council activities related to agri-food systems

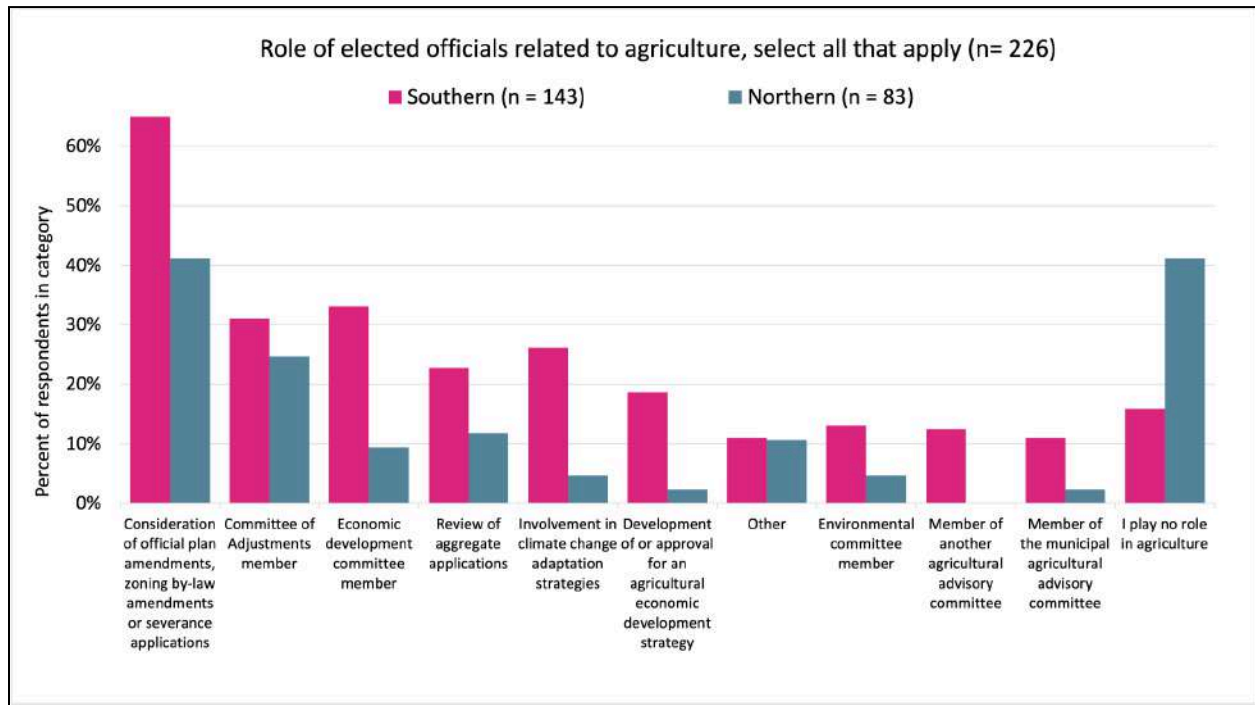
Through the elected official survey, respondents were asked to identify what roles they play related to agriculture. Figure 4.26 depicts roles that municipal council members play related to agri-food systems planning. It should be noted that respondents were asked to select all roles which applied to them. The most frequently identified roles of municipal elected officials include their consideration for planning act applications (e.g., official plan amendments, zoning

by-law amendments, consent applications), belonging to a municipal committee whose work intersects with the agri-food system (e.g., economic development, committee of adjustments), and involvement in adjacent work portfolios (e.g., climate change, aggregates). Beyond the roles identified through the survey questionnaire, elected officials also provided additional commentary regarding how their role intersects with agri-food systems planning. For example, a number of elected officials commented on their role in supporting the sustainable management and stewardship of land (West, LT, Elected Official Survey). Related to this, some elected officials reflected on the role of councils in promoting local and regional agri-food systems and land use planning processes. A respondent from northern Ontario suggested that:

All councillors need to be aware of the municipality's sustainability plan and the municipality's role in facilitating relationships with community partners to develop local food strategies. All councillors need to have a strong understanding of the Official Plan and the Zoning By-Law. (North, ST, Elected Official Survey)

Respondents from municipalities that were part of two-tier municipal structure also provided some commentary regarding whether lower-tier or upper-tier municipalities had more of a role to play in agri-food systems planning. An elected official from one upper-tier municipality in western Ontario commented: “I completed this survey as a member of the upper-tier Council. Our lower-tiers would be more in tune in my opinion” (West, UT, Elected Official Survey). This sentiment was not commonly shared by elected officials from upper-tier municipalities in Ontario and many indicated that upper-tier councils had an important role to play in coordinating and promoting agri-food systems at a regional scale.

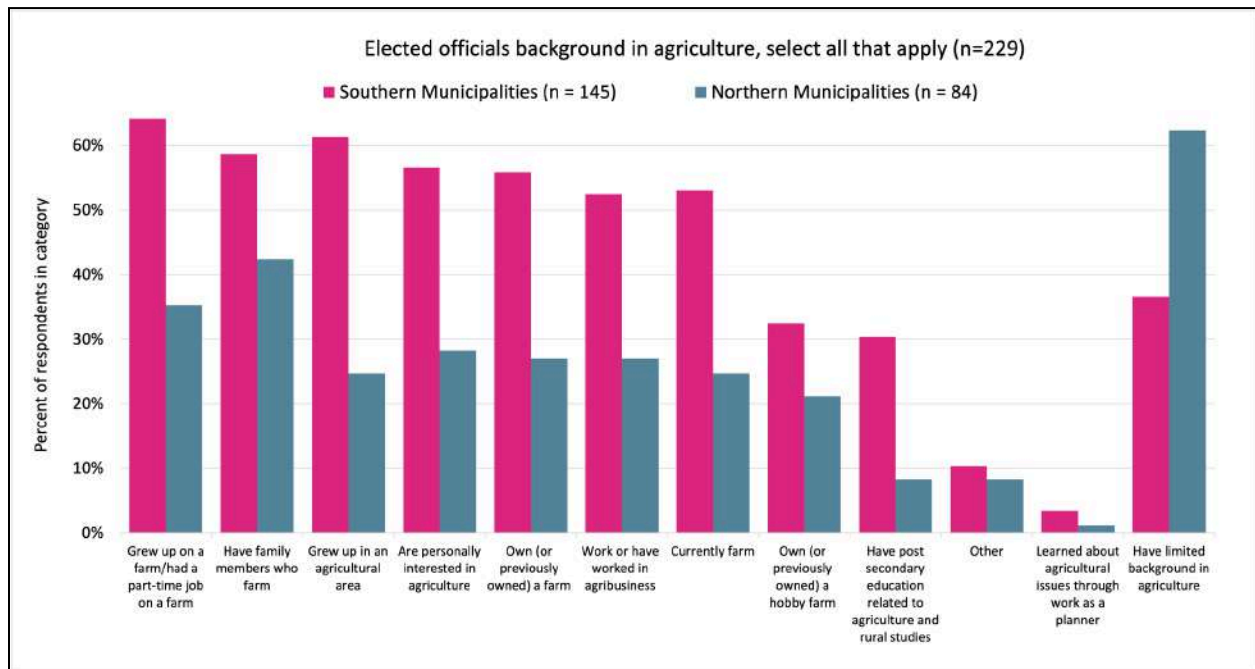
Figure 4.26 - Role of elected officials related to agriculture



4.5.3.2 Council knowledge and sources of advice related to agri-food issues

The elected official survey also asked respondents to indicate their municipal councils' background and lived experiences related to agriculture and food systems (Figure 4.27). The most common connections to agriculture held by municipal elected officials include having grown up on a farm, having family members who farm, growing up in an agricultural area, and being personally interested in agriculture. There were also a reasonable number of respondents who indicated that members of their municipal council owned a farm, currently farm, or work in agri-business. It should also be noted that nearly 40% of elected official respondents from southern Ontario and over 60% of respondents from northern Ontario indicated that municipal elected officials in their municipality have a limited background in agriculture.

Figure 4.27 - Elected officials background in agriculture



Through open-ended survey questions and the planner interview, some respondents explained that the number of elected officials in their municipality with a background in agriculture has been decreasing over time. For example, one respondent commented that in their municipality “a minority of elected officials on council have agricultural experience. So we really need to sell agricultural issues” (West, LT, Elected Official Survey). Another respondent commented: “There will be a new council this fall without its current farm members. Perhaps an Agricultural Advisory Committee will need to step up” (East, LT, Elected Official Survey). Respondents also shared concern that the decreasing number of elected officials with an agricultural background posed a risk to local and regional agri-food systems. Even in municipalities where multiple elected officials had a background in agriculture, respondents discussed challenges with limited knowledge amongst their peers. Several respondents also highlighted difficulties in finding reliable information to make more informed decisions related to agri-food systems planning. A respondent from eastern Ontario explained:

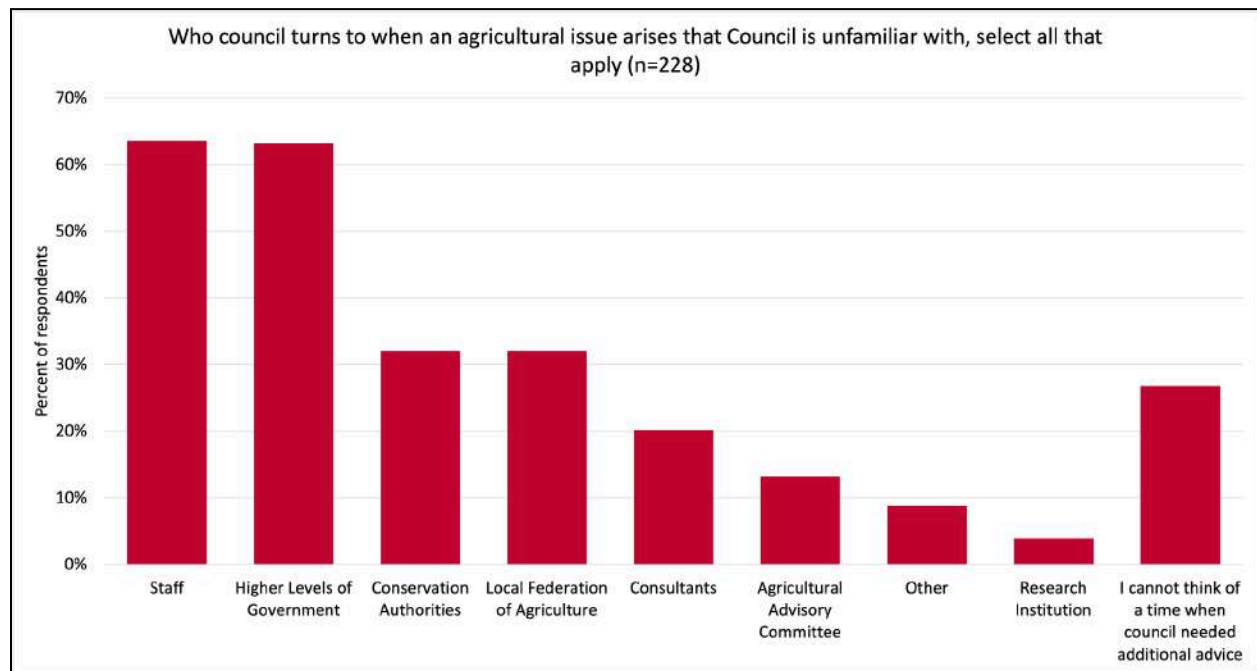
Although we have some council members with strong agricultural backgrounds (i.e., current farm owners with decent sized operations), they are not always viewed by their council peers as subject matter "experts". Also, because we are only infrequently asked

to deal with matters that are directly agriculture related, we do not have a large body of tacit knowledge on the subject. These two things combined mean that we must usually spend time (and sometimes money) on external resources in order to gather information. (East, LT, Elected Official Survey)

It is common for municipal councils to rely on external knowledge and expertise as part of the decision-making process. Respondents were asked to identify who the municipal council turned to when faced with a new or unfamiliar agri-food systems related issue (Figure 4.28). Over 60% of respondents indicated turning to municipal staff and upper levels of government (e.g., OMAFA) for advice. Conservation authorities, local federations of agriculture, and consultants were also identified as important sources of advice to council on agricultural issues. Respondents were also provided the opportunity to list other groups they turn to for advice related to agri-food systems and identified local farmers, agricultural commodity groups, farmers markets organizations, economic development associations, research institutions, and environmental groups, as additional sources of information.

While outside sources of expertise and advice related to agri-food systems were largely recognized for their positive contributions to council decision making, a few respondents noted challenges that resulted when council received conflicting advice. Respondents noted in some cases councils reliance on outside expertise undermined planning staff efforts. For example, a respondent from western Ontario elaborated on this challenge in their municipality - “the local federation of agriculture strongly influences council decision making. This at times goes counter to professional advice, slows down progress, and disadvantages the community” (West, ST, Elected Official Survey).

Figure 4.28 - Who council turns to when an agricultural issue arises that council is unfamiliar with



4.5.3.3 Municipal council commitment and competing priorities

While understanding who council consulted for agri-food issues provides insights into their sources of advice, it is equally important to understand municipal councils approach to decision making. The elected official survey asked respondents to select a decision-making approach related to agriculture that best described their council - including “Agriculture is critically important to our community and our decisions reflect that”, “Agriculture is important but our decisions do not always reflect that”, “Agriculture is somewhat important but we have other priorities” and “Agriculture is not a priority in our community”(Figure 4.29). Of 224 respondents, only 30% indicated that their council’s decisions consistently reflected agricultural priorities. Figures 4.30 and 4.31 depict the council's collective approach to making decisions regarding agricultural issues as reported through the elected official survey by municipality type and MMAH Municipal Service Office Regions respectively. Regardless of geographic location or municipality type, respondents from across the province reported challenges in making agriculturally supportive decisions while balancing other priorities. This was further elaborated on through open ended survey questions and the planner interview.

Figure 4.29 - Council approach to decision making

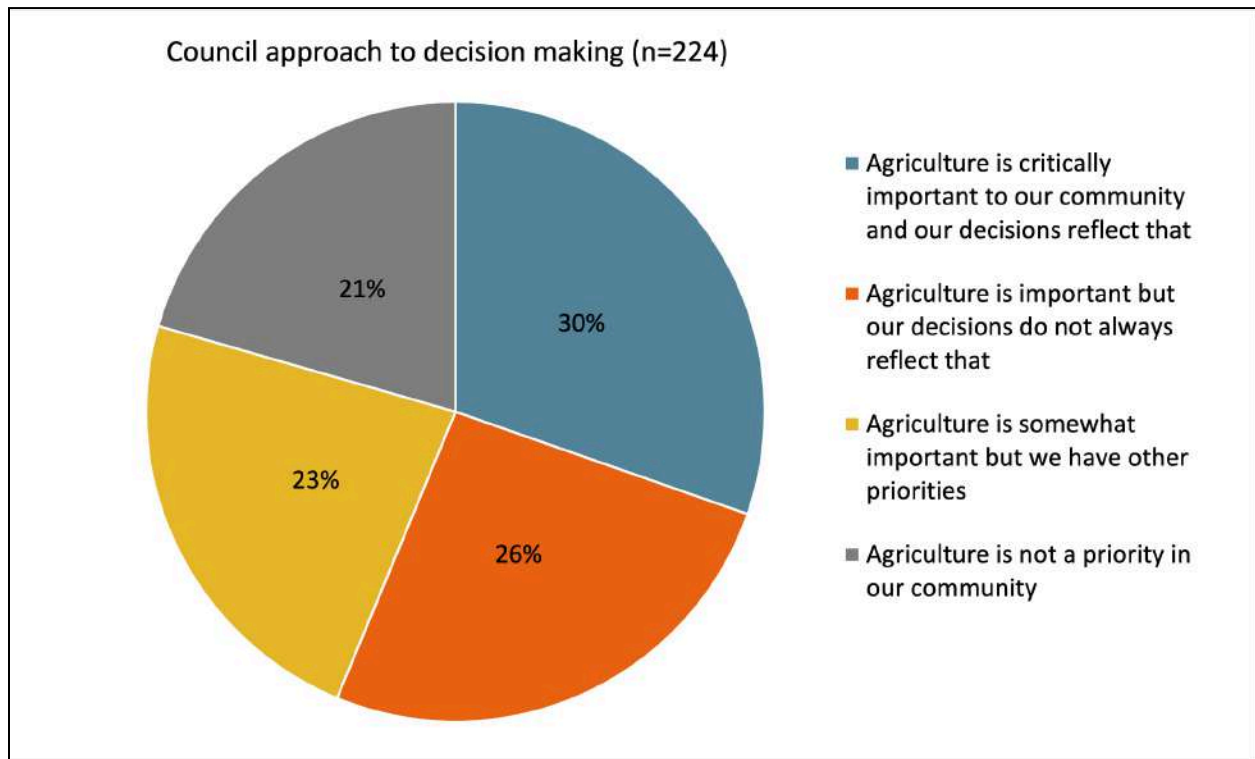


Figure 4.30 - Council approach to decision making by municipality type

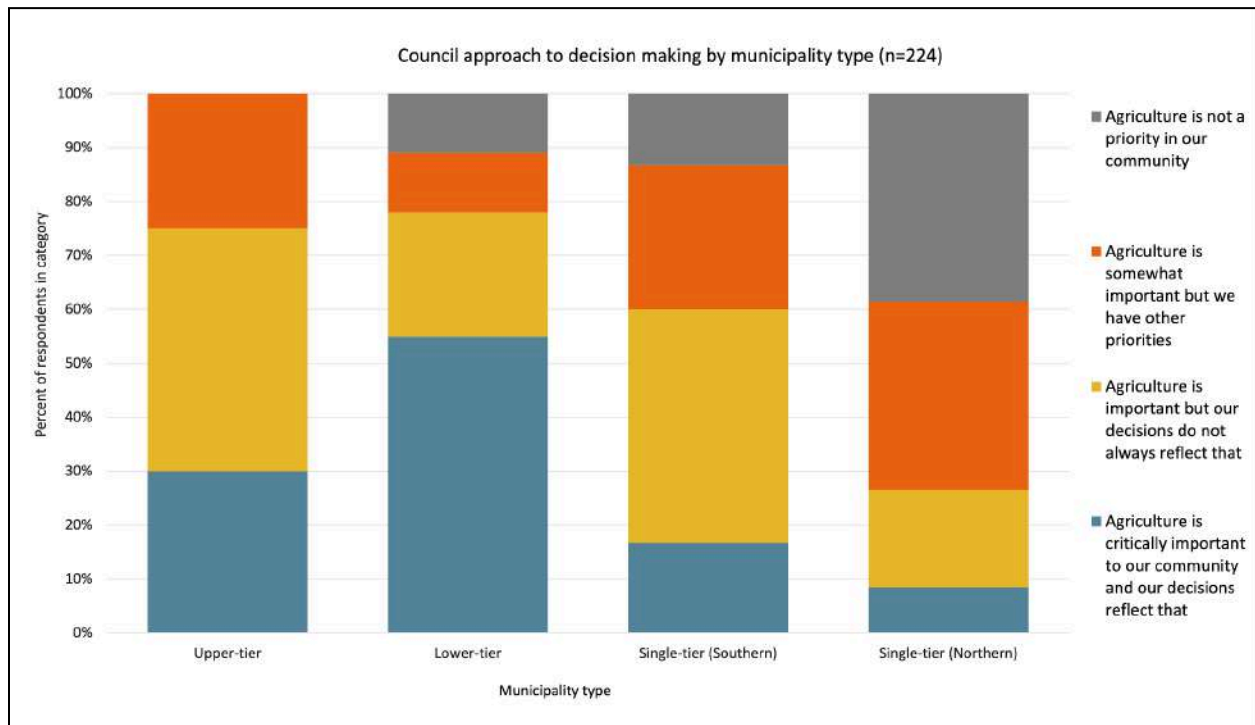
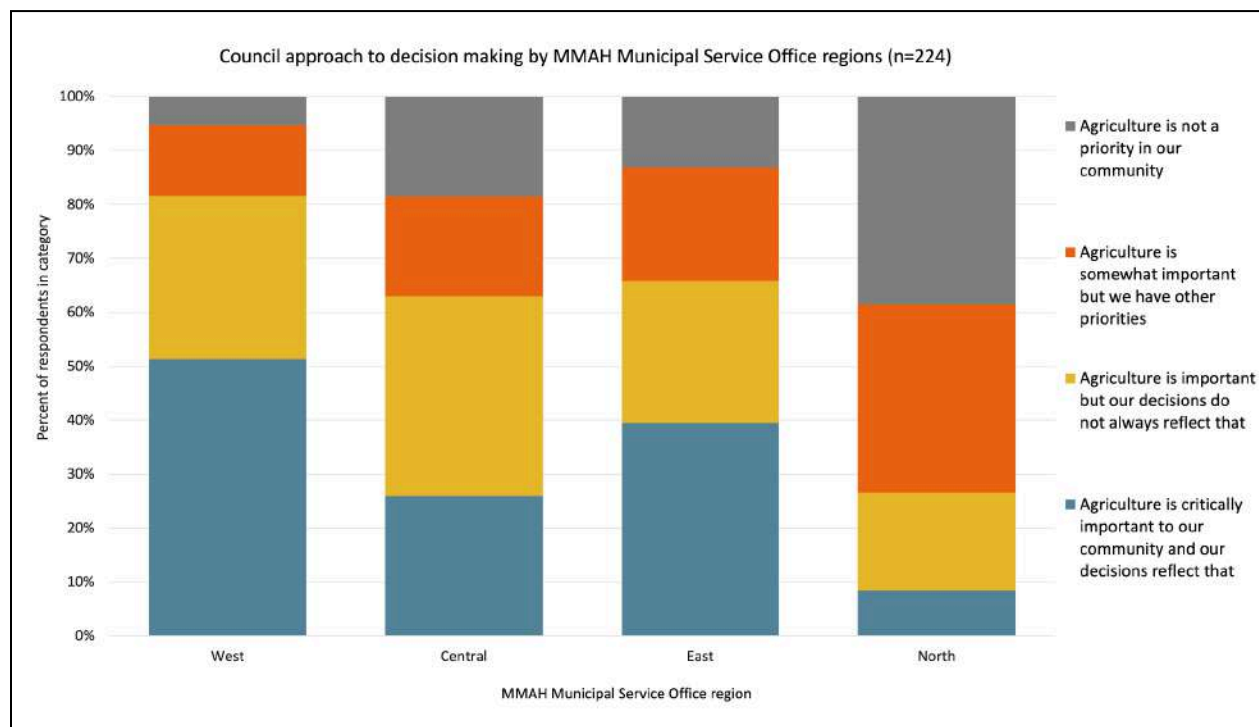


Figure 4.31 - Council approach to decision making by MMAH Municipal Service Office regions



Several respondents discussed competing municipal priorities and diverging opinions about how best to support the agri-food sector as detrimental to agriculturally supportive decision making. For example, a planner from western Ontario commented:

Our councils are very, very supportive of the agricultural community in the county. Many of our councillors are farmers themselves. I would say the majority of our local councils average two to three farmers. So they are generally very supportive of agriculture. But with that comes varying perspectives on what actually supports agriculture and what would inhibit agriculture to thrive. (West, UT, Planner Interview)

This sentiment was shared by an elected official from western Ontario: “We do not have a strong BIG picture guiding us. We mostly agree that we want to stay as a strong agricultural community, but my feeling is that this is not strategically outlined, and is being done somewhat blindly” (Central, LT, Elected Official Survey). The absence of a clear vision and strategic direction for supporting the agri-food sector paired with mounting growth pressures across the province, leaves agri-food systems planning initiatives in a vulnerable position. A planner from western Ontario shared that in their municipality:

We have 11 councillors, and a lot of them have a farming background. So they are very entrenched in the rural economy and the development of agriculture. But we are getting more and more of a population that's urban. And every year agriculture is becoming less and less important. (West, ST, Planner Interview)

A similar sentiment was shared by several other planners who felt that agri-food systems were being overshadowed by other priorities. A planner from western Ontario commented:

"Agriculture is not what's taking council's time, at the county or locally. The focus is around housing, affordable housing, and trying to find opportunities for our workforce and to be able to fill the needs of employers" (West, UT, Planner Interview). Another planner commented:

Agriculture is just a little drop in the bucket [of what council deals with]. Even when we presented our agri-food growth plan, it was endorsed, but not a single question. Nobody paid attention to it. It feels like it's not on their priority list at all. (Central, UT, Planner Interview)

The tension between agricultural land protection and growth and development was most frequently reported by respondents from southern Ontario. That being said, some northern municipalities are facing similar pressures. For example, a planner from northern Ontario commented that their municipal council was "very pro development" and that one of their "biggest challenges as a planning department has been trying to limit rural residential development" (North, ST, Planner Interview).

It's also important to note that a number of respondents from northern Ontario reported significant council support for agriculture and agri-food systems. One planner explained:

Council knows that agriculture is our biggest growing area. It's really hard to attract businesses to set up here because we're very rural. ... because of our rural demographics, the farming industry, the farming businesses make the most sense. I think council is really supportive of it. (North, ST, Planner Interview)

Another planner explained that in their municipality the "former mayor was a big advocate for agricultural production here in the city. So there is a major focus from the council on agricultural production - any type of agriculture, value-added agricultural facilities, or businesses that come

in” (North, ST, Planner Interview). A similar focus was highlighted by a planner from Cochrane, who noted that the municipality’s new strategic plan “speaks to the need to start thinking about producing locally and how do you sustain your community with more local food” (North, ST, Planner Interview).

Several elected officials from northern municipalities indicated that while agriculture was not currently a priority in their municipality, they could see that changing in the future. One respondent shared that in their municipality “younger generations have been much more active in urban farming and redeveloping business plans for farms but due to the older age skew on Council, I believe that council is unaware of this work” (North, ST, Elected Official Survey). Another respondent reflected:

The opportunity for agriculture within our community is an interesting prospect from not only an economic standpoint, but also from a biodiversity and climate standpoint as well. It is something that has not crossed my mind in terms of our municipality prior to receiving this survey. (North, ST, Elected Official Survey)

Respondents from other municipalities in northern Ontario shared similar sentiments, often reflecting on community resilience, climate change, and the opportunities resulting from technological advancements in the agri-food sector (e.g., controlled environment agriculture). This sentiment is summarized well by a respondent who said, “We are not presently an agricultural community but that does not mean that we can't become better versed and interested in seeing how agriculture might apply to this community in the future” (North, ST, Elected Official Survey).

4.5.3.4 The role of the Provincial government

The final factor related to the land use planning framework in Ontario is the role of the Provincial government. As was mentioned in Section 4.4.4 the land use planning framework and the role of the Provincial government was widely discussed by respondents. In particular respondents noted the quantity and frequency of changes to the planning process in recent years, increased involvement of the Ministry of Municipal Affairs and Housing in local planning matters (e.g., settlement boundary expansion decisions), and the unprecedented use of

Minister's Zoning Orders as being particularly damaging to municipal land use planning processes. Respondents reported that these changes have led to increased uncertainty within the planning profession, a decline in public trust, and increased workload associated with land use planning at the local level. These changes were noted as being detrimental to agri-food systems planning priorities. Keeping municipal planning documents up to date with current Provincial policies was also discussed as a significant challenge for municipalities with more limited resources. One respondent went so far as to identify “provincial interference” as the biggest challenge to the land use planning process in their municipality (West, LT, Elected Official Survey).

That being said, several respondents noted having positive relationships with Provincial ministry staff working on land use files (e.g., OMAFA and MMAH). More specifically, respondents discussed contacting the Province when faced with an agri-food issue or topic they were unfamiliar with. For example, one respondent from central Ontario explained:

We rely on OMAFRA for their expertise and guidance, and to give us advice on what other municipalities have done when certain issues come up. We work with both our OMAFRA economic development officer and rural planner a lot. They provide us guidance and input from the provincial perspective. ... I don't think we could do our work without them. (Central, UT, Planner Interview)

A planner from eastern Ontario commented:

Our OMAFRA planner has been a great help. Whenever we have MDS questions, or just need to have a discussion with another planner on provincial policy when it comes to agriculture, agricultural policies in the provincial policy statement, or on-farm diversified uses and the MDS document. OMAFRA staff are a big help to us and have definitely helped us work through the policies. (East, ST, Planner Interview)

Similar sentiments were shared by some planners from western and northern Ontario. One planner joked that they had OMAFRA “on speed dial” to help respond to agricultural issues and challenges (West, ST, Planner Interview).

However, not all respondents reported receiving the same level of assistance from OMAFA staff and some respondents explained that a lack of support from Provincial ministries was a detriment to their capacity. In this context, respondents were looking for more resources and guidance from Provincial ministries (including MMAH and OMAFA) and noted a number of challenges including: limited and out of date guidance materials, long wait times, unclear direction regarding best practices, challenges getting written policy interpretations, and staff turnover at the Province. A respondent from eastern Ontario summarized these criticisms well:

I think part of the challenge is that some of the provincial ministries aren't necessarily readily accessible or available anymore. And especially when it comes to helping us with discussing provincial policy or implementing provincial policy, they've really tried to make it - 'now we've done this so you guys go and implement it'. There aren't staff resources there to assist as readily anymore. And nobody wants to put anything in writing. It makes it challenging. ... You know, we've had a few on-farm diversified applications, and they haven't gone over very well. So it would be really helpful if we could phone up the Province and have a discussion about it - Are there similar instances elsewhere in the province that you're aware of? And I think it's that discussion, that collaboration, that was there, once upon a time, that seems to have dried up. Now the Province doesn't seem to want to get into local planning issues at all. It's been missing for a few years now. (East, ST, Planner Interview)

Another planner commented:

It feels like each municipality is trying to figure some of these things out for themselves and there's not always a coordinated, strong position from the Province on helping municipalities with issues. ... I guess we don't necessarily want the Province telling us exactly what to do, but it would be nice if they could recommend best practices or more guidelines - like the on-farm diversified uses guide. That is more helpful than just putting out one policy that says 'municipalities across the province shall do this'. Sometimes you're thinking - other places must have already dealt with this or there must be a best practices guide but when you call the Province [...]. (West, UT, Planner Interview).

A third respondent noted the growing difficulty in accessing provincial support, stating, “We do look to OMAFRA a little bit [for support]. But honestly, they're so busy, and our timelines are so short, that we just don't get a chance to have those conversations like we used to” (West, ST, Planner Interview). Respondents were also critical about the lack of training opportunities provided by the Province in recent years. One planner commented: “It just seems like we're always starting at the beginning with training sessions like MDS. But it's more of the in-depth conversations and kind of the next steps that we're missing. Particularly with OMAFRA, but MMAH as well” (West, ST, Planner Interview). Several respondents acknowledged that Province used to play a more important role in supporting municipal staff but that had changed in recent years. One respondent reflected: “I've been around long enough that I know the Province used to be involved in a lot of positive things in terms of empowering communities” (East, UT, Planner Interview).

There were also a handful of municipalities that were looking for more nuanced direction regarding agricultural policies across the province. Respondents who commented on the need for local or regionally specific agri-food systems land use policy were most often from eastern and northern Ontario. One respondent explained: “We would like the Province to recognize, and we've been harping on this for years, that agricultural planning is not one size fits all” (North, ST, Planner Interview). Another planner from northern Ontario commented: “There needs to be recognition that there are municipalities that are outside of Oxford County with agricultural areas and they need to be treated differently, because the vast majority of land in northern Ontario is designated rural [not prime agricultural]” (North, ST, Planner Interview). A similar sentiment was shared by a planner from eastern Ontario:

One of the things OMAFRA might really want to try and consider is to try and work out how to get more significant sort of policy input and how to shape policy based on the rural need. One size does not fit all. Southwestern Ontario, and eastern Ontario and northern Ontario are three distinct regions. You know, there are very different activities that shape how things are done. They really might be better off looking at some sub-regional approaches. (East, UT, Planner Interview)

While the majority of comments regarding the need for a more nuanced approach to agricultural land use planning came from respondents from eastern and northern Ontario, there were a few respondents from municipalities in western and central Ontario who recognized a similar need. For example, one planner from central Ontario discussed their experience with agri-food systems planning in the GTA:

Provincial policies in support of agriculture are often better suited to larger rural areas with more dominant agricultural sectors and better representation, these tools do not always allow the flexibility/creativity that is required to support urban-fringe agriculture which faces more pressure from competing urban/non-agricultural uses. (Central, LT, Planner Interview)

Beyond land use planning, some respondents reflected that the Province could play more of a role in supporting urban agriculture, small operations, and young farmers. Several respondents noted bureaucracy associated with Provincial processes as being detrimental to small operations. This sentiment was most often shared by respondents from northern Ontario. For example, one respondent commented: “The biggest thing that turns people away from opening or starting a farm operation is when they have ministry oversight. It can be intimidating” (North, ST, Planner Interview). Another respondent commented:

If people didn't feel like they were going to be taking on the government by themselves. And they actually had support to try and make some of their dreams come true. You would probably see a lot more of them actually realized. (North, ST, Planner Interview)

4.5.4 A commitment to local and regional agri-food systems

The final theme related to municipal agri-food systems planning capacity includes a variety of factors that have been characterized as relating to a municipal commitment to local and regional agri-food systems. This theme encapsulates considerations that relate to individual or organizational beliefs and convictions that local and regional governments have an important role to play in supporting agri-food systems. This section will provide insights and commentary regarding the culture of agriculture, hiring practices, conceptualizations of agri-food systems

planning, and the role of an ag-vocate as contributing to municipal agri-food systems planning capacity.

4.5.4.1 Culture of agriculture

Many respondents emphasized that agriculture is central to their community's fabric and identity, especially in western and central Ontario, where it serves as both a dominant land use and a key economic driver. There were also a handful of respondents in eastern and northern Ontario who equally recognized the importance of the agricultural sector in their municipality. In these municipalities both staff and elected officials indicated higher levels of knowledge and awareness related to the agri-food system and a commitment to ensuring the long-term viability and success of the sector. For example a planner from western Ontario commented:

In municipalities where you have a strong history of protection of agriculture, it's part of the culture of the planning department and the political system. ... Where if you don't have a strong history related to agriculture it's easy to see those systems being undermined. (West, UT, Planner Interview)

Another planner from western Ontario reflected that in their municipality:

Agriculture is the foundation of our society. So many people in [municipality name] have ties back to agriculture. Maybe their family isn't agricultural anymore, but there's a rural culture piece that is rooted in agriculture. It impacts the work that we do. (West, UT, Planner Interview)

A similar sentiment was shared by an elected official from central Ontario who said, "[municipality name] is very proud of its farming and agricultural history and want to be sure our farm lands are left intact for future generations" (Central, LT, Elected Official Survey).

While a large agricultural land base and a history of agricultural production were often discussed as prerequisites to a "culture of agriculture", some respondents noted that recent global challenges, particularly the COVID-19 pandemic, had highlighted vulnerabilities in global supply chains and resulted in growing interest in local and regional agri-food systems. For example, one respondent from northern Ontario commented: "in the past people never really thought about it. [Agriculture] was just something that was there. But I think we've come to the

point where we need to start pushing it and supporting it and promoting it a lot more” (North, ST, Planner Interview). In this context, the culture of agriculture was discussed as positively contributing to municipal agri-food systems planning capacity.

4.5.4.2 Hiring practices

As part of supporting the agri-food sector several respondents from central Ontario discussed the importance of hiring staff with agricultural backgrounds, knowledge, and experience. Having someone on staff with agricultural expertise was largely recognized as positively contributing to agri-food systems planning outcomes, including increased awareness of agricultural issues and trends, more effective policy implementation, and stronger relationships with agricultural stakeholders. For example, one planner explained that in their municipality:

Having somebody that understands the agri-food industry, intimately, is very helpful. It bridges the gap between what the industry considers common sense and what planning policy is trying to accomplish. ... Being able to bridge that is a big advantage. (Central, UT, Planner Interview)

Another planner from central Ontario explained:

It’s part of the bigger picture. When I’m trying to implement policy it helps to have on the ground knowledge. An understanding of what it looks like, and smells like, and what the challenges a farmer faces are. That understanding helps with reading policies and interpreting them, and trying to get good policy written. (Central, UT, Planner Interview)

A third planner explained:

We try to recruit people who have an agriculture background and are sensitive to agricultural issues. This might be based on previous employment working in a smaller municipality in a semi-rural or rural setting or they might be University of Guelph graduates ... as long as they have a sensitivity and awareness, and a willingness to learn, and listen to the rural community. (Central, ST, Planner Interview)

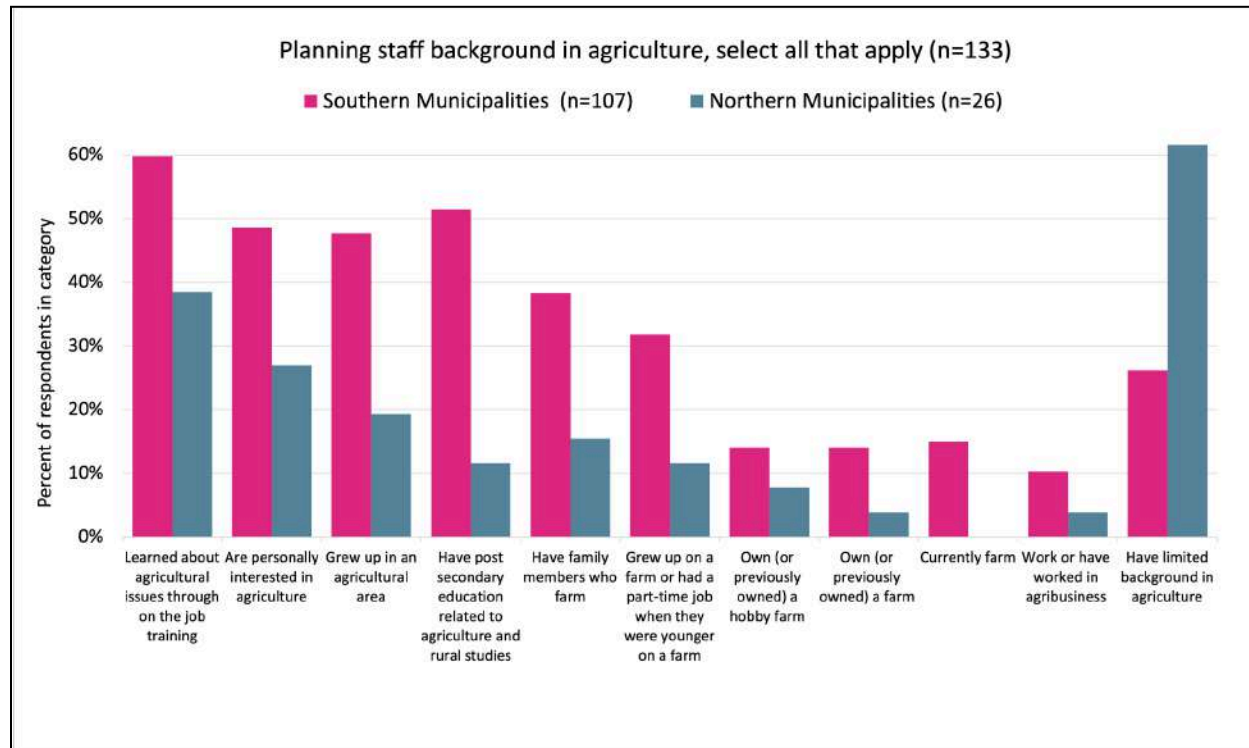
While it was largely recognized that having in-house agricultural expertise was an asset to municipal agri-food systems planning, several respondents discussed challenges with hiring and

retaining land use planners with rural and agricultural expertise (see Section 4.4.6). One respondent reflected on the situation in their municipality where some of their planning staff lack a background in agriculture:

Sometimes what I see is the other planners haven't quite thought about all of the details of how an application might affect the agricultural community or a neighbouring farmer, because they don't have that background. (West, ST, Planner Interview)

In the planner survey respondents highlighted that the most common source of agricultural knowledge among planning staff is on-the-job training, rather than formal education or prior experience (Figure 4.32). In this context, respondents discussed the need for increased opportunities and training related to rural and agricultural land use planning topics. Suggestions from respondents included both more formal training opportunities (e.g., training and modules offered by the Province, research institutions, and professional organizations) as well as experiences in the field (e.g., farm visits, participation in agricultural events).

Figure 4.32 - Planning staff background in agriculture



4.5.4.3 Conceptualizations of municipal agri-food systems planning

The way planning staff conceptualize agri-food systems directly influences municipal planning approaches, shaping the extent to which agri-food considerations are integrated into broader land use strategies. While respondents did not explicitly address their ‘conceptualization of municipal agri-food systems planning’, their discussion and commentary regarding municipal agri-food systems planning provided insights into how they viewed the role of the planning department. For example, several respondents commented that many aspects of agri-food systems planning fall outside of ‘core land use planning’ work. This division was articulated well by a planner who commented that they tended to view “agricultural land use planning” as separate from “broader social issues related to food and food security” (North, ST, Planner Interview). Another planner commented that “food systems initiatives” were not within the purview of the planning department, and explained:

I can't think of any agri-food systems initiatives that we have. And if we did, it wouldn't come out of the planning department. And so I don't want to say for sure there isn't, but it's just not something that we would necessarily deal with. ... It's definitely not a component of the planning department. (Central, UT, Planner Interview)

This same planner commented that agricultural issues were “one of the most common things we [the planning department] deal with” (Central, UT, Planner Interview). This siloed approach to agri-food systems planning was countered by planners who believed that planning staff had a more holistic role to play. For example, a planner from eastern Ontario commented: “You know, everything is related. You can't encapsulate the planning function in isolation from everything else” (East, UT, Planner Interview). This planner discussed collaborations between planning and other municipal service departments as being a critical component of agri-food systems planning in their municipality. Another planner discussed the Agricultural Systems Approach as providing the policy rationale to look beyond the agricultural land base and consider broader agri-food systems components, including “food processing, manufacturing, distribution of local food, and the food industry broadly” as well as “urban agriculture” (Central, UT, Planner Interview). The respondent went on to discuss food systems planning work in their municipality, which included working with the food action working group and public health staff, as well as

undertaking research (e.g., looking at the benefits of community gardens). The interviews revealed that planners' views of how municipal agri-food systems planning was conceptualized played a role in determining the types of activities, approaches, and initiatives that planning staff undertook.

4.5.4.4 Ag-vocate on staff and council

The final factor related to a municipal commitment to local and regional agri-food systems is the role of an 'ag-vocate'—a staff member or elected official who actively champions agri-food systems and raises awareness within the municipality. Survey and interview responses highlighted the role of municipal staff and elected officials in advocating for agri-food systems and educating the community. This factor was most often discussed by municipalities that had in-house expertise or a staff person dedicated to agriculture or food systems planning. Respondents who identified as having expertise related to agri-food systems planning often discussed their role as educators. For example, one respondent explained:

We're coming upon our major growth period. ... and it just makes our jobs even more important to make sure agriculture continues to be part of the discussion. I think it's going to be harder for us. But I think it means our jobs are even more valuable in the sense that we need to continue putting agriculture at the top of people's minds.

(Central, UT, Planner Interview)

A similar sentiment was shared by a planner from western Ontario:

I think something we can do a better job of is celebrating agriculture. Getting the agricultural portfolio in front of municipal council in a way that I'm not asking them to say no to a severance application. ... We could put together an annual agricultural report, or a biannual agricultural report that highlights maybe some of the new businesses and shows that there's some really cool things happening. (West, UT, Planner Interview)

While planners discussed their role in keeping agricultural priorities top of mind for municipal councils, elected officials tended to acknowledge that they had a role to play in educating the general public. For example, an elected official from central Ontario commented:

“Municipalities must make sure that rural housing projects are well aware of what it is like to live in a farming community - the sights, sounds and smells” (Central, LT, Elected Official Survey). A similar sentiment was shared by an elected official from western Ontario who described that their municipality was working to promote the agri-food sector and explained:

A lot of this effort will be centered in better communication in the "urban" part of our community, which has grown rapidly and which has a big influx of people who have little to no familiarity with the agri-food sector and its priorities. (West, LT, Elected Official Survey)

A similar communications campaign was contemplated by an elected official from eastern Ontario who reflected: “I see an opportunity (perhaps even a need) to educate the public on the vital role that agriculture plays in our community - and, indeed, the vital role that it plays in our society” (East, LT, Elected Official Survey).

Respondents who felt they had enough knowledge to be an “ag-vocate” were vastly outnumbered by respondents who acknowledged barriers to agri-food systems planning as a result of more limited knowledge on staff or council. Municipalities with limited in-house expertise frequently relied on agricultural organizations (e.g., OFA, GGFFA) and local farm communities to bridge knowledge gaps. These partnerships play a critical role in educating municipal staff, councils, and the public, though respondents emphasized the need for more structured support and training initiatives.

4.6 Implementing Ontario’s agri-food systems land use policies

In addition to evaluating factors which impact municipal agri-food systems planning capacity, this research assessed planning staff knowledge of key agricultural land use policies. Section 4.6 reports on the knowledge of municipal planning departments related to four key agri-food systems land use policies, including: the agricultural systems approach, minimum distance separation, agricultural impact assessments, and normal farm practices. These policies are identified by the Provincial government through the PPS and Provincial Plans (e.g., the Greenbelt Plan). This section draws on data from the planner survey which asked respondents to report on the knowledge level of staff for each policy. Respondents were provided three

options including: we have no knowledge of this one staff; we have some knowledge of this on staff; and we have expertise on staff. It should be noted that only respondents who indicated having in-house planning staff were asked to report on their knowledge level regarding these policies.

In addition to the four policies identified through the survey, respondents also discussed permitted uses (including agriculture-related and on-farm diversified uses), specialty crop areas, lot creation (including surplus farm dwelling severance policies and minimum agricultural lot size), farm worker housing, mineral aggregate extraction, natural heritage systems (including biodiversity and climate change), nutrient management, and the Ontario Wildlife Damage Compensation Program as other provincial policy and program areas that intersect with municipal agri-food systems planning. Respondents also acknowledged the important role that responsible growth management (e.g., intensification, density targets) and settlement area boundary expansion policies play in protecting farmland and creating complete and vibrant communities.

4.6.1 Minimum Distance Separation

The first agri-food systems land use policy that respondents were asked to report on was the Minimum Distance Separation formula. Of 150 respondents 141 (94%) reported that their municipality either had some knowledge or expertise on staff. More specifically, 63 (42%) respondents reported expertise on staff, 78 (52%) reported some knowledge on staff, and 9 (6%) reported no knowledge on staff. Figures 4.33 and 4.34 depict municipal staffs' knowledge of MDS by municipality type and MMAH Municipal Service Office regions respectively. The greatest proportion of respondents from upper-tier municipalities reported having expertise regarding MDS on staff in their municipality. Respondents from central Ontario were less likely to report staff knowledge or expertise in MDS compared to their counterparts in eastern or western Ontario. Furthermore, just over 20% of respondents from northern Ontario indicated having no knowledge of MDS on staff.

Through interview discussions with planners it became clear that municipal planning staff were generally more familiar with MDS than the other three policies asked about (agricultural

systems, agricultural impact assessments, and normal farm practices). That being said, planners indicated a few areas where further clarity would be helpful, including clearer direction on decommissioning livestock barns and guidance on managing urban chickens. Some respondents also suggested that MDS II (which evaluates impacts from new or expanding livestock operations) be removed altogether. They argued that the growing presence of sensitive land uses (e.g., additional residential units, on-farm diversified uses) in rural areas unfairly restricts agricultural expansion, placing the burden on farmers rather than on newer residential developments. One planner commented:

Farming needs to take precedence in the rural area. I think just the way that a highway would take precedence, and if someone living next to the highway doesn't like the noise of cars, well that's too bad. That's how I feel about MDS. I think the Province needs to do away with impacting new and existing livestock operations just because some homes are nearby. It's the homes that should take on that burden, not the farmers. (North, ST, Planner Interview)

Figure 4.33 - Knowledge of the Minimum Distance Separation formulae on staff by municipality type

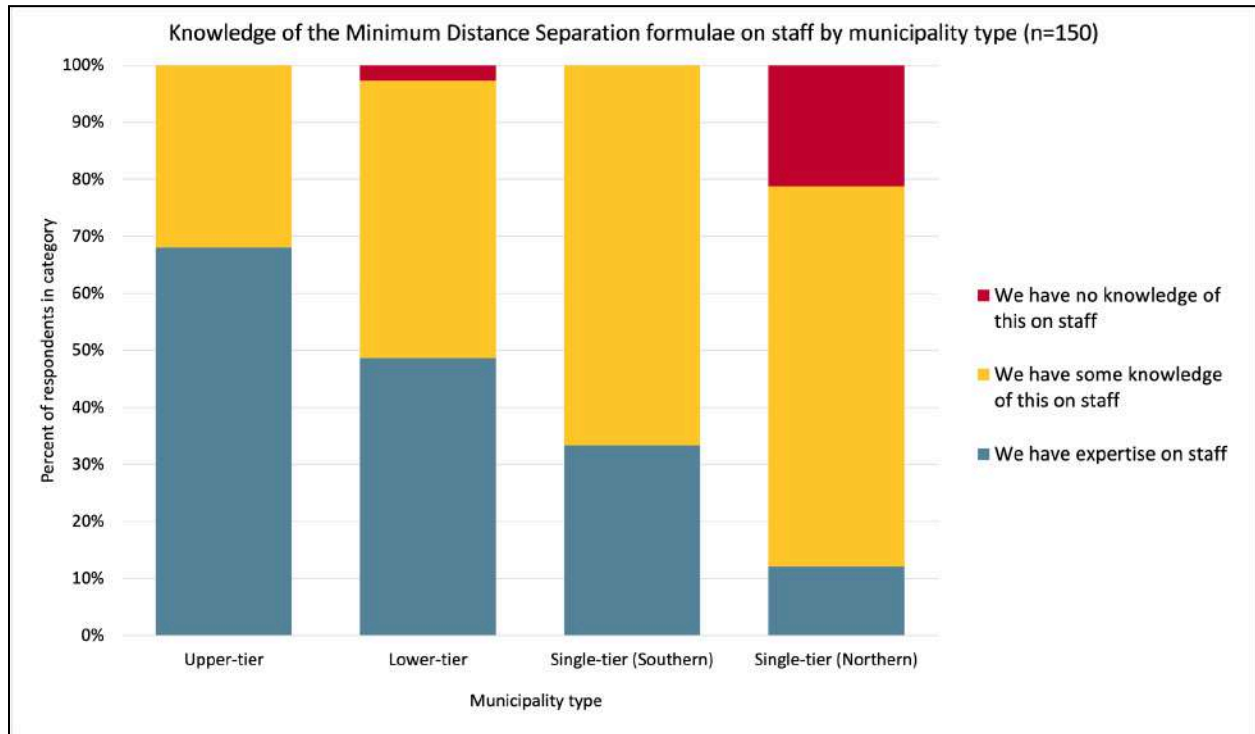
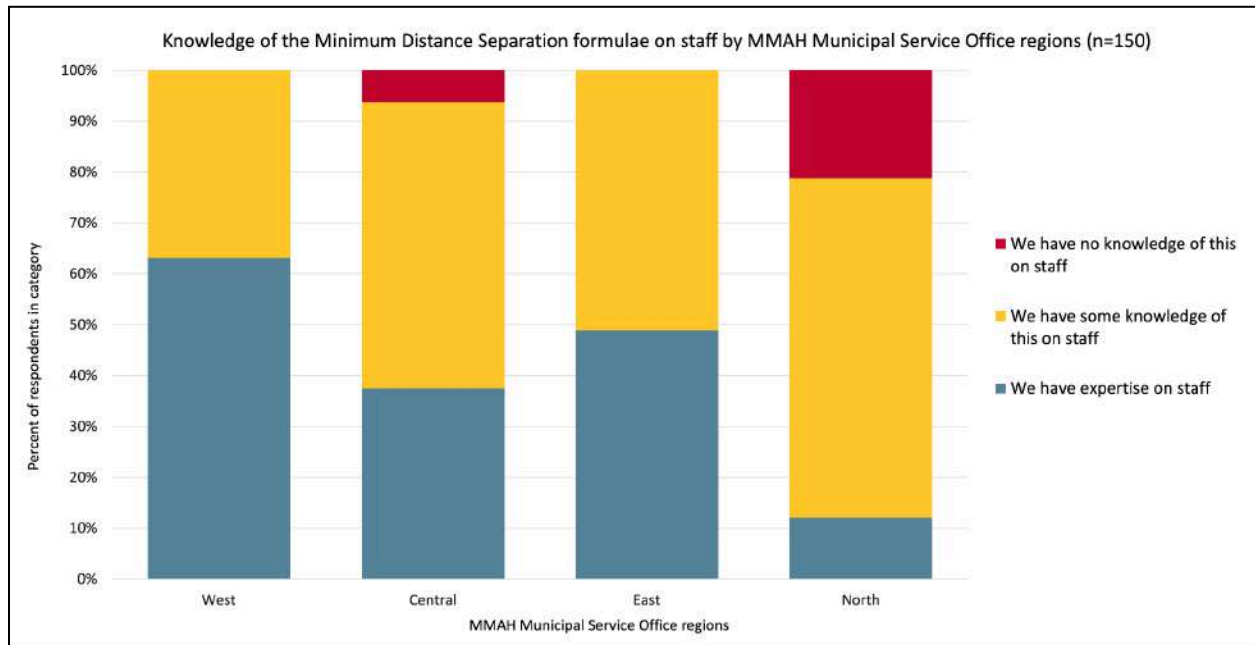


Figure 4.34 - Knowledge of the Minimum Distance Separation formulae on staff by MMAH Municipal Service Office regions



4.6.2 Agricultural system approach

The next agri-food systems land use policy that respondents were asked to report on was the agricultural system approach. Of 149 respondents, 32 (21%) reported they had expertise on staff, 68 (46%) reported some knowledge on staff, and 49 (33%) reported no knowledge on staff. Figures 4.35 and 4.36 depict municipal staffs' knowledge of the agricultural systems approach by municipality type and MMAH Municipal Service Office regions respectively. A larger proportion of respondents in upper-tier and single-tier southern municipalities reported expertise regarding the agricultural system approach on staff than those from lower-tier and single-tier northern municipalities. It is interesting to note that a significant proportion of respondents from single-tier southern municipalities also reported no knowledge of the agricultural system approach on staff. While northern Ontario municipalities most consistently reported limited staff knowledge of the agricultural system approach, at least some respondents from all four regions (West, Central, East and North) indicated similar gaps.

Figure 4.35 - Knowledge of the agricultural system approach on staff by municipality type

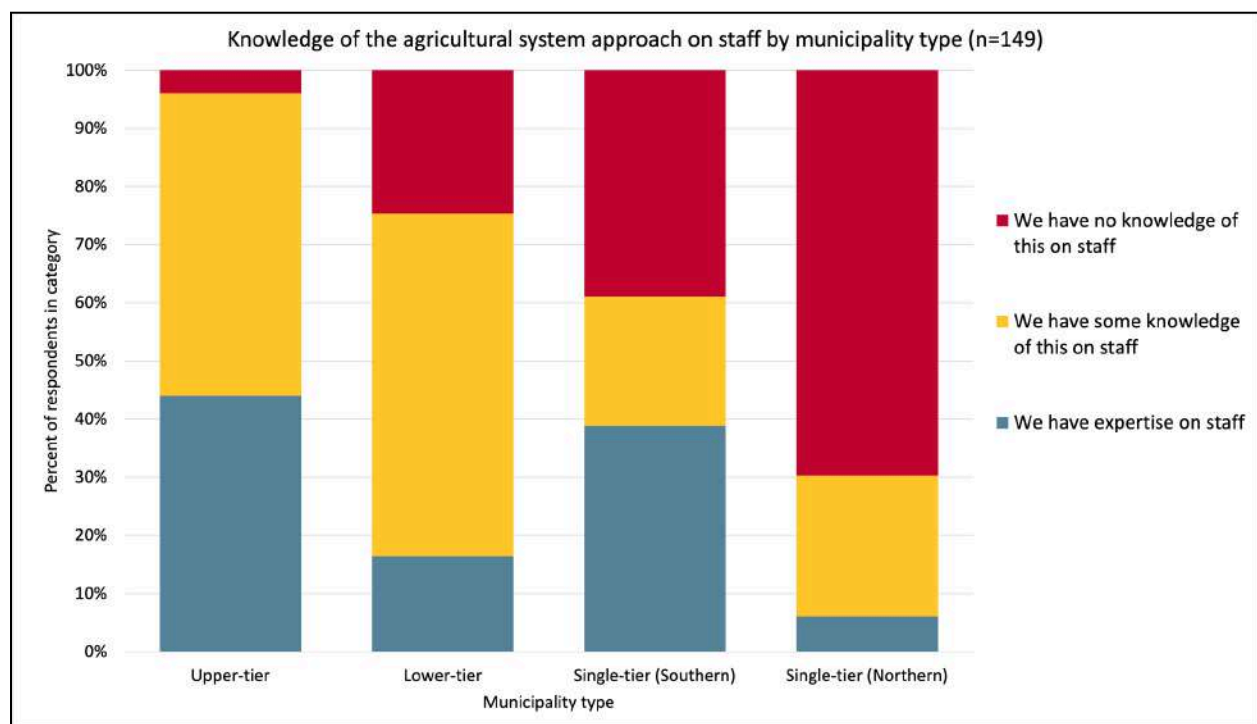
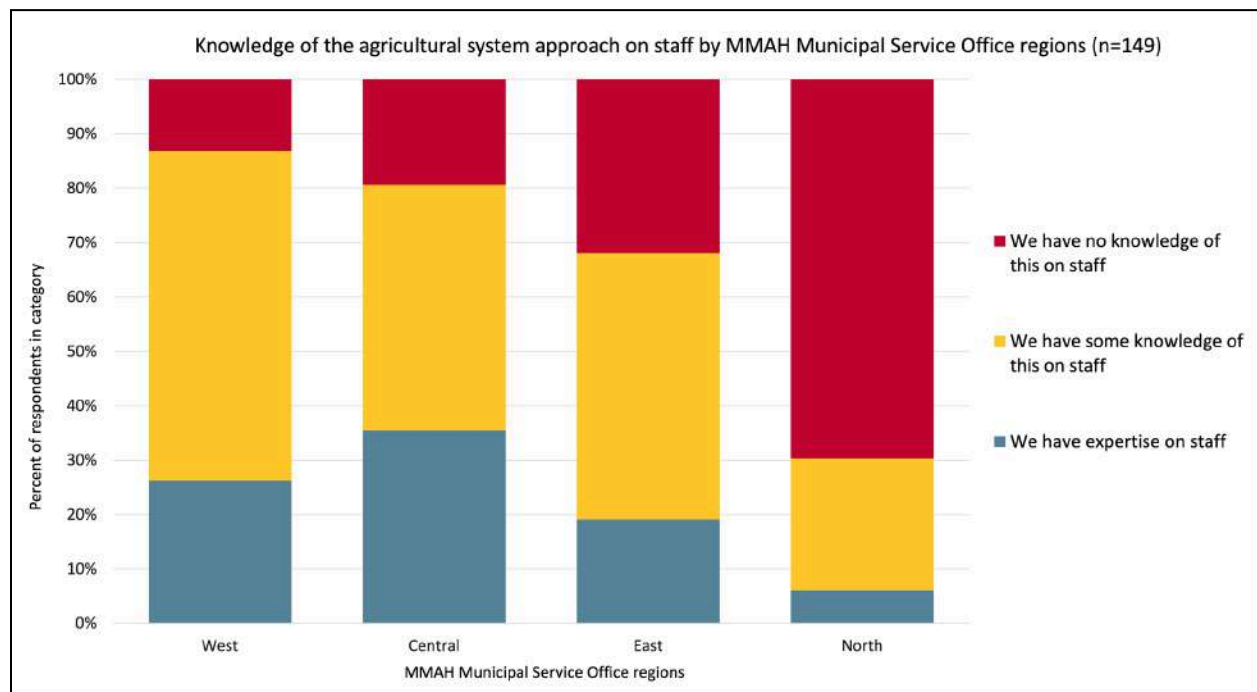


Figure 4.36 - Knowledge of the agricultural system approach on staff by MMAH Municipal Service Office regions



Through the planner interviews, it became clear that upper-tier tier municipalities within Ontario’s Greenbelt were most familiar with and had made significant effort to implement the agricultural systems approach. A planner from central Ontario reflected:

I loved the switch to focusing on the agricultural system. That it's not just about the protection of the land as a resource, but about agriculture as an industry and as a system. I think people sometimes forget that agriculture is an industry. And there are certain things we need to do to protect it. (Central, UT, Planner Interview)

Another planner commented on the importance of recognizing and supporting the agri-food network, including municipal infrastructure and agricultural related businesses (e.g., implement dealerships, repair shops, input suppliers). They explained that protecting and supporting the agri-food network in their municipality was “mission critical to the long term viability of the agricultural sector” (Central, ST, Planner Interview). That being said, planners also shared some criticisms regarding the agricultural system approach, including looking for additional direction from the Province and more hardlined tools for protection. One planner commented:

The Province has taken the first step towards mapping the Provincial agricultural system but is falling short of meaningful policy to protect it over the long term. More and more, as farmers retire or relocate to more agriculture-friendly areas of the province, prime agricultural lands are dominated by low investment cash cropping, entertainment farms and rural residential estate development. (Central, LT, Planner Survey)

Respondents had a number of suggestions relevant to the agricultural system approach, including more clear direction and requirements regarding municipal agri-food strategies, support in reviewing candidate prime agricultural areas, training and support for how to use online mapping and data resources related to the agricultural system, the development of tools for considering cumulative impacts, and baseline data reporting requirements.

4.6.3 Agricultural impact assessments

The next agri-food systems land use policy that respondents were asked to report on was agricultural impact assessments. Of 149 respondents, only 12 (8%) reported they had expertise on staff, 84 (56%) reported some knowledge on staff, and 53 (36%) reported no knowledge on staff. Overall, fewer respondents indicated expertise on staff regarding agricultural impact assessments than either MDS or the agricultural system approach. Figures 4.37 and 4.38 depict municipal staffs' knowledge of AIAs by municipality type and MMAH Municipal Service Office regions respectively. It is interesting to note that a larger proportion of respondents from upper- and lower-tier municipalities indicated some knowledge of AIAs on staff than single-tier municipalities. Figure 4.38 shows that western Ontario had the largest proportion of respondents with some knowledge of AIAs, followed by central, eastern, and northern Ontario. The inverse trend is true for the proportion of respondents who indicated no knowledge on staff, with a large proportion of respondents from northern Ontario indicating no knowledge regarding agricultural impact assessment.

Through the planner interview and open-ended survey questions, the most frequent comment related to AIAs was that it would be helpful to have finalized Provincial guidance to support the preparation and review of AIAs. While a few planners discussed having in-house AIA guidelines or terms of reference, the majority did not have experience requesting and/or reviewing

agricultural impact assessments. Many respondents expressed doubts about their municipalities' capacity to prepare or review an AIA in-house, citing limited staff knowledge and expertise. One planner from western Ontario reflected:

I've never seen an AIA. So I guess I'd have to take a look at it and see if it's something we might need to get it peer reviewed. I don't even know really what would be involved in it. So I don't know if we could review it in house or not. Probably not, to be honest.

(West, ST, Planner Interview)

Other challenges with agricultural impact assessment identified by respondents include: unclear standards, difficulties finding consultants to prepare or peer review AIAs, limited knowledge regarding AIAs within the planning profession, and uncertainty about how to consider cumulative impacts. A planner from central Ontario, shared their perspectives on the limitations of AIAs and agricultural land use policy in general:

There is nothing in policy related to Agricultural Impact Assessments that considers cross-municipal cumulative impacts and staff expertise is limited in this area. Private consulting services for AIAs are fairly niche and also not readily available in the inner Greater Golden Horseshoe municipalities. ... With no baseline requirement for agricultural land base supply, no cumulative impact assessment, no requirements for land compensation and no investment in restoration and enhancement, limited local staff expertise, and limited political representation, the future of the Agricultural System (particularly in near-urban areas) is greatly compromised. (Central, LT, Planner Survey)

A handful of respondents reported that their municipality had developed local Agricultural Impact Assessment Guidelines or Terms of Reference, including: [Halton Region](#), [York Region](#), [Dufferin County](#), [Town of Caledon](#), [Town of Niagara-on-the-Lake](#), and the [City of Hamilton](#). Notably, Halton Region's Agricultural Impact Assessment Guidelines were developed in 2014, several years prior to the release of the Provincial Draft Agricultural Impact Assessment (AIA) Guidance Document in 2018.

Figure 4.37 - Knowledge of Agricultural Impact Assessments on staff by municipality type

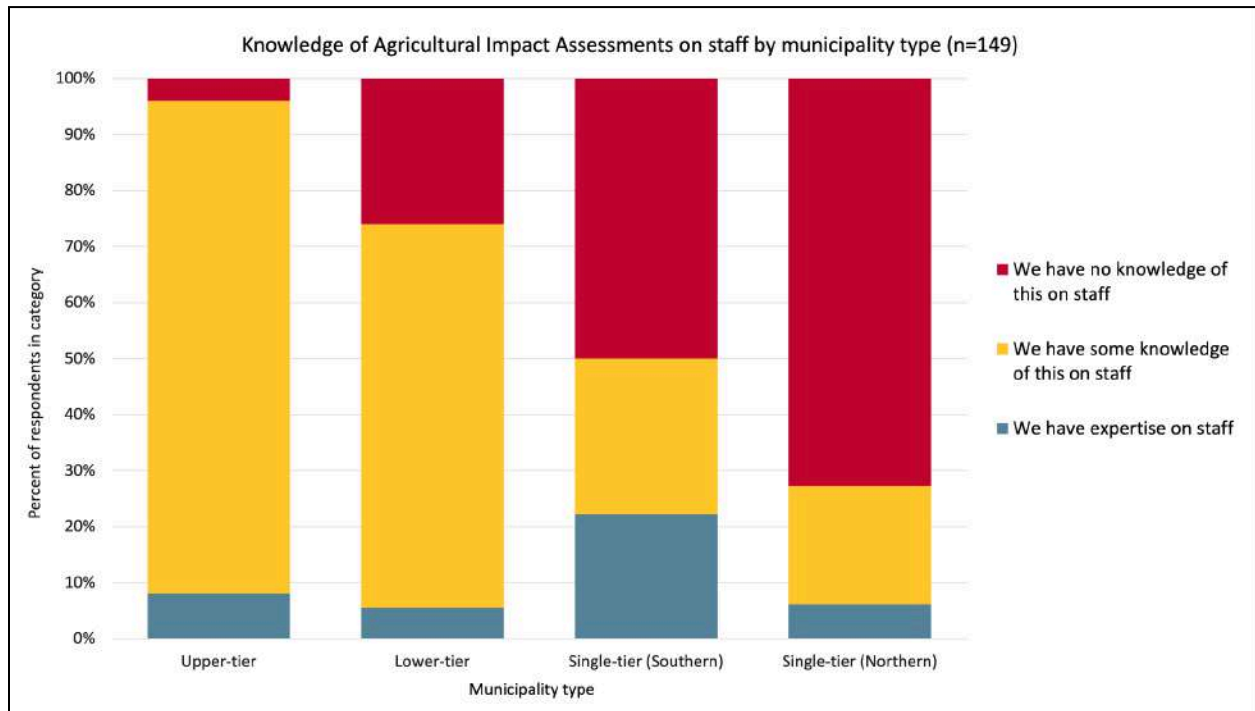
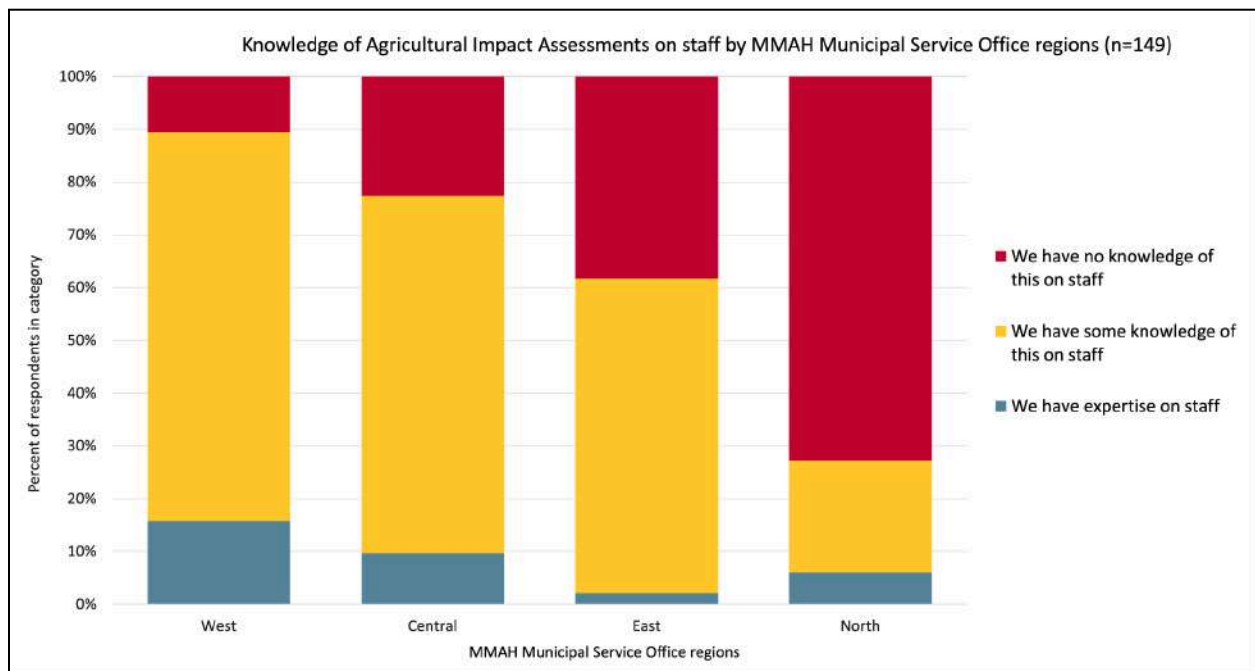


Figure 4.38 - Knowledge of Agricultural Impact Assessments on staff by MMAH Municipal Service Office regions



4.6.4 Normal farm practices

The final agri-food systems land use policy that respondents were asked to report on was normal farm practices and the Farming and Food Production Protection Act (FFPPA). Of 149 respondents, 15 (10%) reported they had expertise on staff, 83 (56%) reported some knowledge on staff, and 51 (34%) reported no knowledge on staff. Figures 4.39 and 4.40 depict municipal staffs' knowledge of normal farm practices by municipality type and MMAH Municipal Service Office regions respectively. While upper-tier municipalities and those in western Ontario reported the highest levels of expertise related to normal farm practices and the FFPPA, many municipalities still face knowledge gaps that could hinder effective agri-food systems planning. Sections 4.4.2 and 4.4.6 provide more discussion regarding normal farm practices as discussed by respondents.

Figure 4.39 - Knowledge of the Farming and Food Production Protection Act on staff by municipality type

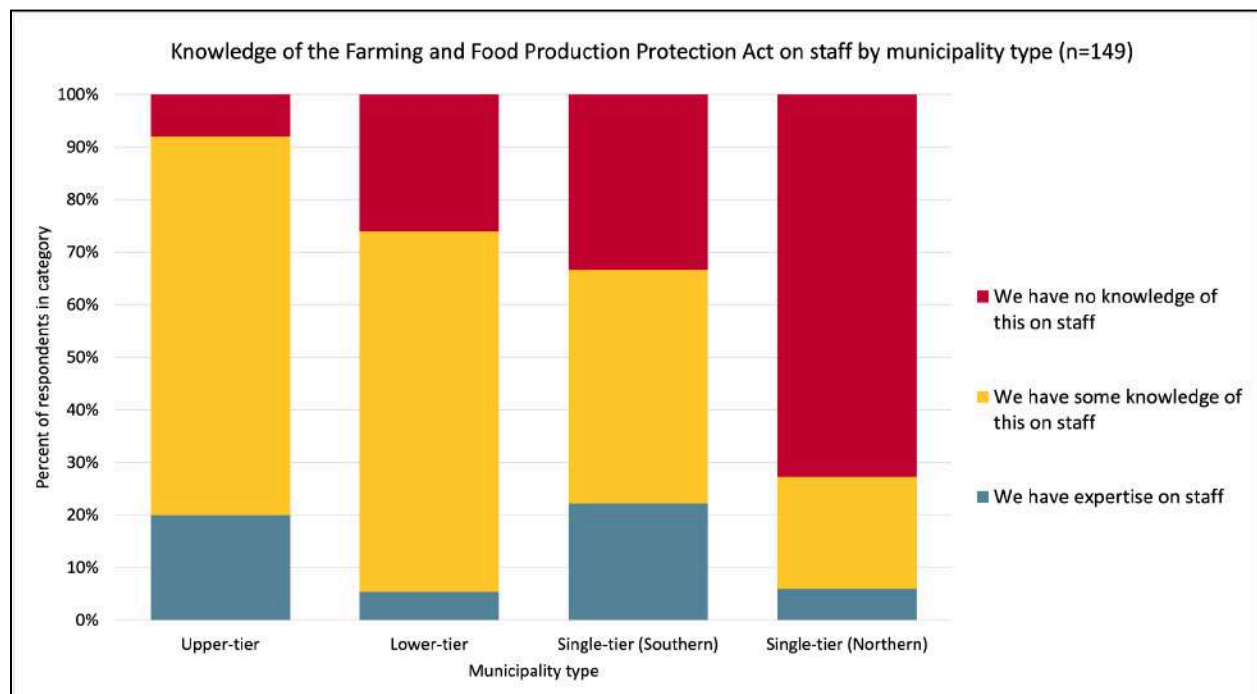
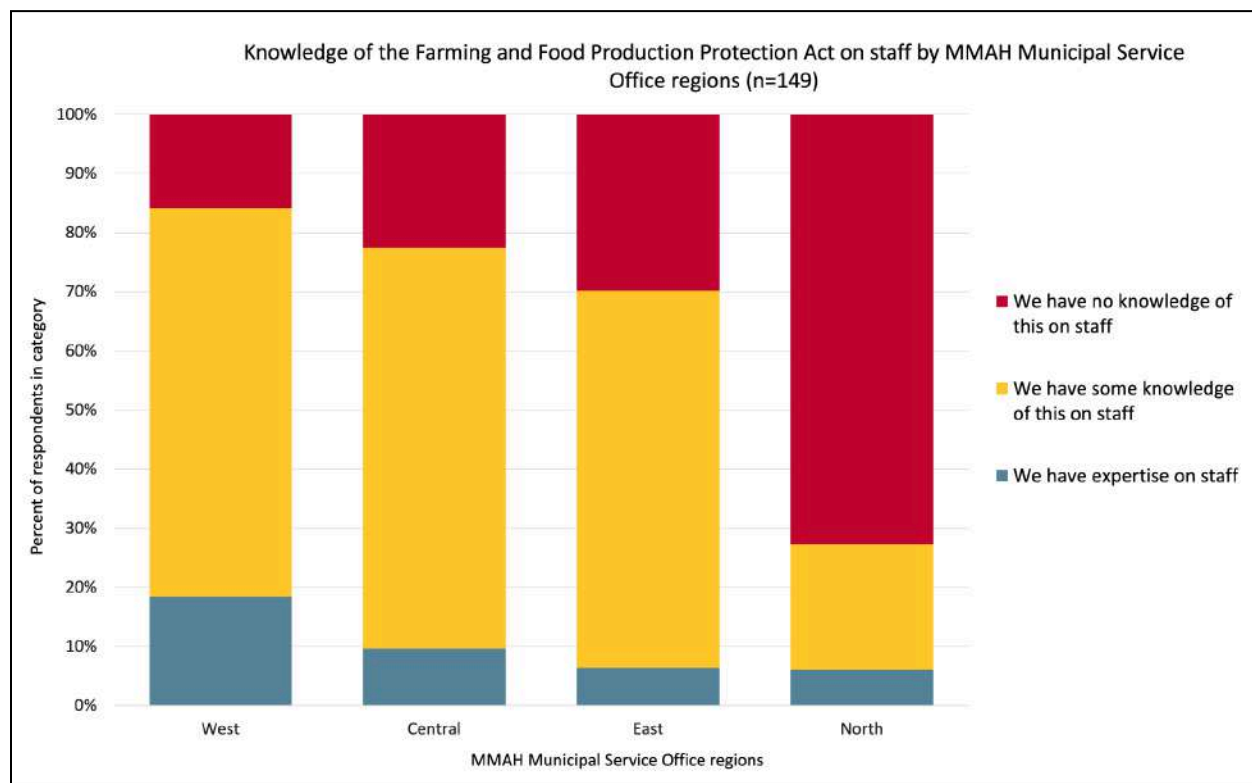


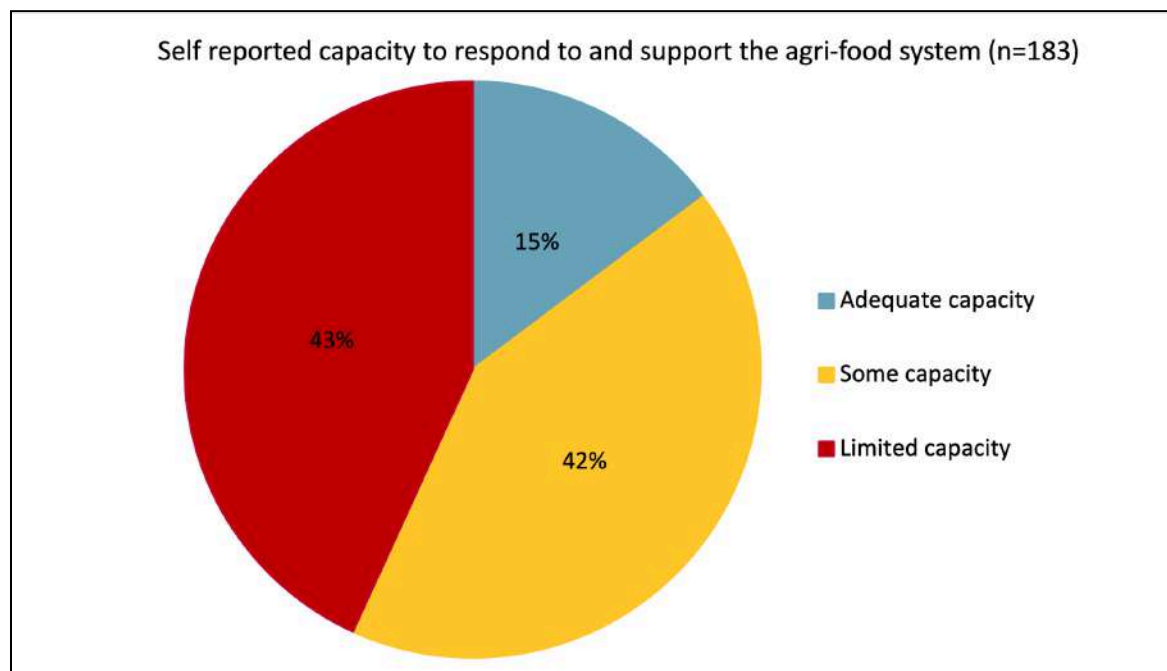
Figure 4.40 - Knowledge of the Farming and Food Production Protection Act on staff by MMAH Municipal Service Office regions



4.7 Reported municipal agri-food systems planning capacity

The final section of Chapter 4 addresses the research question: *How does municipal agri-food systems planning capacity vary across the province?* More specifically this chapter draws a question for the planner survey which asked respondents to rate their municipality's capacity to respond to and support the agri-food system (limited capacity, some capacity, adequate capacity). Figure 4.41 depicts municipal capacity to support and respond to the agri-food system as reported by respondents through the planner survey. The vast majority of respondents rated their municipality's capacity to respond to and support the agri-food system as either limited or some. Only 14% of respondents reported that their municipality had adequate capacity to respond to and support the agri-food system.

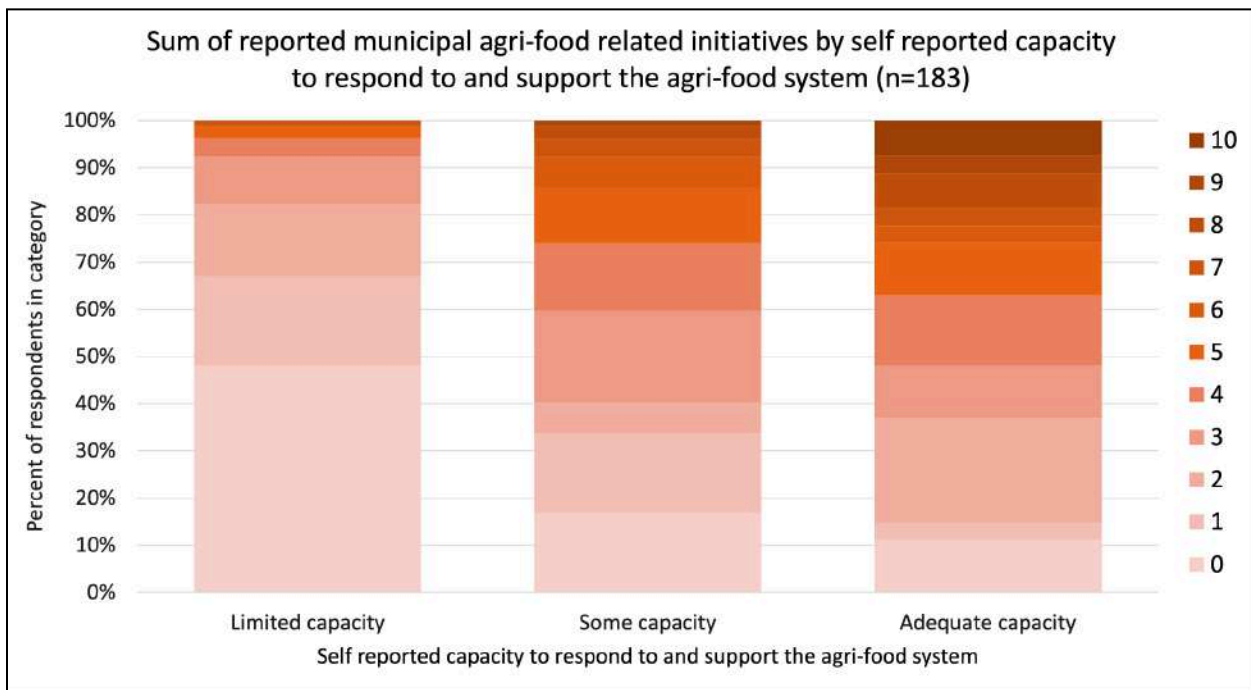
Figure 4.41 - Planner survey - Self-reported capacity to respond to and support the agri-food system



The planner survey also asked respondents to indicate if their municipality had a number of different agri-food systems planning initiatives, such as an agricultural strategy, buy local initiatives, water quality program, and climate change strategy, among others. In total, respondents were asked about the status of 10 different types of municipal agri-food systems planning initiatives. While the results regarding municipal initiatives will be discussed in more detail in Chapter 5, this data can be used to investigate if higher levels of self-reported capacity are associated with a higher number of agri-food systems planning initiatives. Figure 4.42 depicts the sum of reported municipal agri-food related initiatives by self-reported capacity to respond to and support the agri-food system. Notably, respondents who indicated higher levels of capacity were also more likely to indicate their municipality had more agri-food systems planning initiatives in place. There are several caveats to this analysis. Notably, it does not capture all aspects of municipal capacity, such as the age of municipal planning documents or the strength of relationships with agri-food stakeholders. Additionally, this research did not investigate the views and experiences of the agri-food sector in relation to these initiatives. In

other words, having more agri-food systems planning initiatives may not necessarily translate into more support for the agri-food sector.

Figure 4.42 - Planner survey - Sum of reported municipal agri-food related initiatives by self-reported capacity to respond to and support the agri-food system



4.7.1 Exploring variance in reported capacity across Ontario

The following section looks to explore the relationship between reported capacity and predictor variables, including: planning department structure, municipality type, MMAH Municipal Service Office regions, and urban versus rural classification. Appendix K includes the R script and resulting statistical analysis associated with this section of the report. It should be noted that this research project did not look to create a comprehensive model of municipal agri-food systems planning capacity in Ontario. That being said, the analysis included in this section can be used as a starting point for future research in this area.

4.7.1.1 Planning department structure and reported capacity

Table 4.9 Figure 4.43 depicts self-reported capacity to respond to and support the agri-food system by planning service delivery models. Based on Figure 4.43 it can be observed that a

slightly larger proportion of respondents from municipalities where planning was its own department reported higher levels of capacity than municipalities where planning was part of a larger department. Respondents from municipalities without in-house planning staff reported significantly lower levels of capacity. Looking at the results from the Chi-squared analysis and Fisher's Exact Test the p-values are both less than 0.05 which indicates that there is a statistically significant relationship between reported capacity and the planning department structure. This means that respondents from different planning service delivery models reported different levels of capacity than they would by chance alone.

- *Pearson's Chi-squared test: $\chi^2 = 12.153$, $df = 4$, $p\text{-value} = 0.01625$*
- *Fisher's Exact Test for Count Data: $p\text{-value} = 0.01601$*

Proportional odds logistic regression can be used to investigate how and to what degree reported capacity and planning service delivery model are associated. The regression model summarized in Table 4.10 explains that respondents from municipalities with no in-house planning staff are 3.5 times more likely to report lower levels of capacity than respondents working at a municipality with a planning department.

Table 4.9 - Self-reported capacity to respond to and support the agri-food system by planning service delivery model			
	Limited capacity	Some capacity	Adequate capacity
Planning is its own department	21	34	10
Planning is included as part of a larger department	35	36	13
The municipality does not have an internal planning department nor does it employ planning staff	23	7	4

Figure 4.43 - Planner survey - Self-reported capacity to respond to and support the agri-food system by planning service delivery model

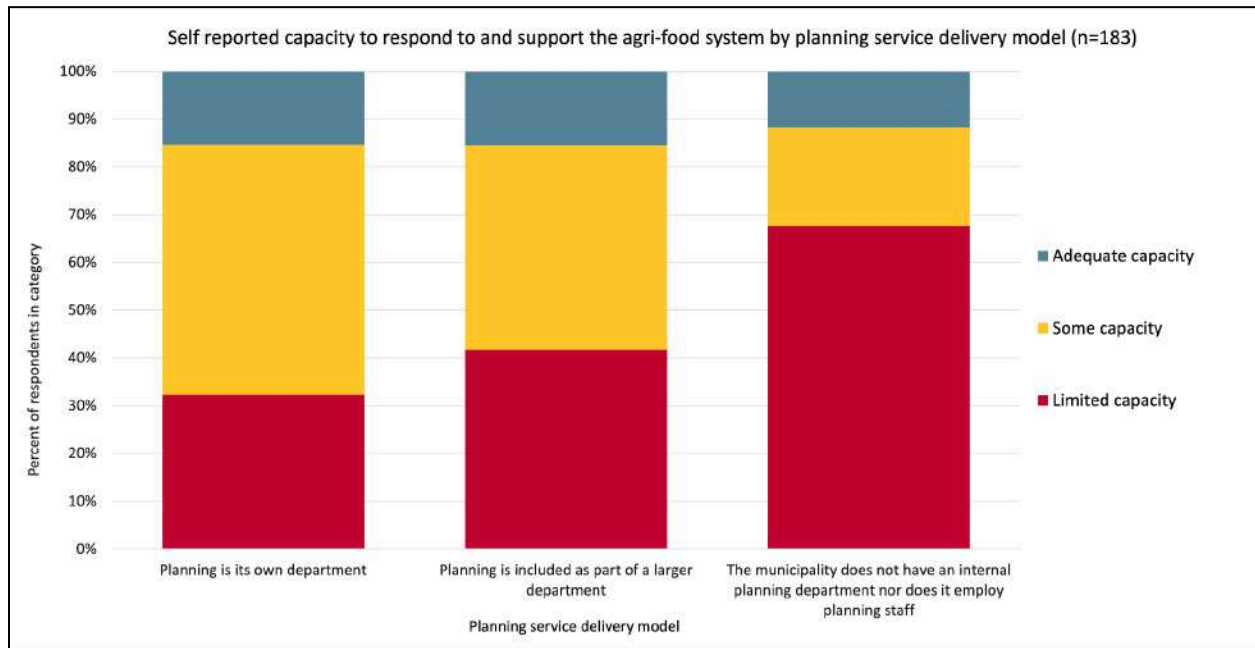


Table 4.10 - Proportional odds logistic regression analysis looking at reported capacity and planning service delivery model

	Odds Ratio	Coefficient	P-value	Confidence interval	
				2.5%	97.5%
Planning staff	-0.2695891	0.7636933	3.821091e-01	-0.8769217	0.3343251
No planning staff	-1.2659958	0.2819584	3.718312e-03	-2.1508203	-0.4300767

Appendix K includes the R script and resulting statistical analysis associated with this section of the report.

4.7.1.2 Municipality type and reported capacity

Table 4.11 and Figure 4.44 depict self-reported capacity to respond to and support the agri-food system by municipality type. Figure 4.44 shows that a larger proportion of respondents from upper-tier municipalities ranked their municipality's capacity as 'adequate' or 'some' compared to lower-tier or single-tier municipalities. Looking at the results from the Chi-squared analysis and Fisher's Exact Test the p-values are both less than 0.05 which indicates that there is a statistically significant relationship between reported capacity and municipality type. This means that respondents from different municipality types reported different levels of capacity than they would by chance alone.

- Pearson's Chi-squared test: X-squared = 32.626, df = 4, p-value = 1.425e-06
- Fisher's Exact Test for Count Data: p-value = 3.357e-07

Proportional odds logistic regression can be used to investigate how and to what degree reported capacity and municipality type are associated. The regression model summarized in Table 4.12 explains that respondents from lower-tier and single-tier municipalities are respectively 4.5 and 11.2 times more likely to report lower levels of capacity than respondents from upper-tier municipalities.

Table 4.11 - Self-reported capacity to respond to and support the agri-food system by municipality type			
	Limited capacity	Some capacity	Adequate capacity
Upper-tier	1	15	9
Lower-tier	31	42	10
Single-tier	47	20	8

Figure 4.44 - Planner survey - Self-reported capacity to respond to and support the agri-food system by municipality type

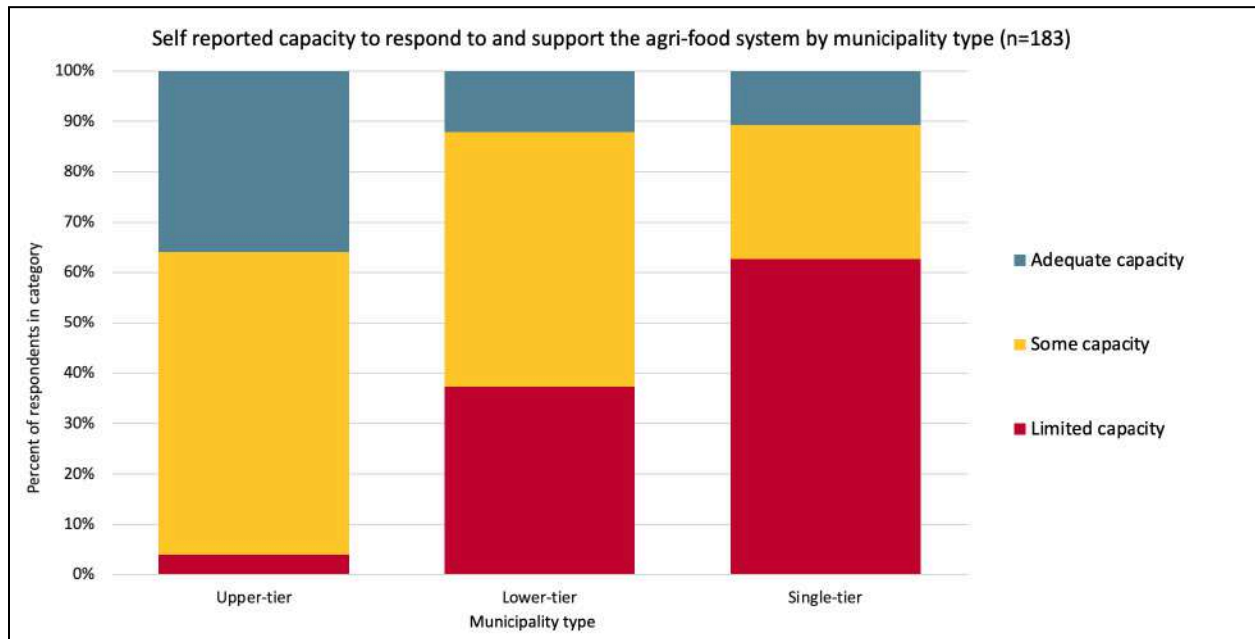


Table 4.12 - Proportional odds logistic regression analysis looking at reported capacity and municipality type

	Odds Ratio	Coefficient	P-value	Confidence interval	
				2.5%	97.5%
Lower-tier	-1.5070653	0.22155923	5.738096e-04	-2.382817	-0.6612919
Single-tier	-2.4134894	0.08950244	2.369898e-07	-3.350544	-1.5148367

Appendix K includes the R script and resulting statistical analysis associated with this section of the report.

4.7.1.3 MMAH Municipal Service Office regions and reported capacity

Table 4.13 and Figure 4.45 depict self-reported capacity to respond to and support the agri-food system by MMAH Municipal Service Office (MSO) regions. Figure 4.45 shows relatively consistent capacity levels across southern Ontario (MMAH MSO West, Central, and East). Respondents from northern Ontario were more likely to report lower levels of capacity related to municipal agri-food systems planning. Looking at the results from the Chi-squared analysis and Fisher's Exact Test the p-values are both less than 0.05 which indicates that there is a statistically significant relationship between reported capacity and MMAH Municipal Service Office regions. This confirms a statistically significant association between MMAH Municipal Service Office regions and reported capacity, suggesting that regional differences impact municipal agri-food systems planning.

- Pearson's Chi-squared test: X-squared = 28.092, df = 6, p-value = 9.028e-05
- Fisher's Exact Test for Count Data: p-value = 6.196e-05

Proportional odds logistic regression can be used to investigate how and to what degree reported capacity and MMAH Municipal Service Office regions are associated. The regression model summarized in Table 4.14 explains that respondents from municipalities in MMAH MSO North are 5.4 times more likely to report lower levels of capacity than respondents from municipalities in MMAH MSO West.

Table 4.13 - Self-reported capacity to respond to and support the agri-food system by MMAH Municipal Service Office regions			
	Limited capacity	Some capacity	Adequate capacity
West	10	26	7
Central	11	17	4
East	18	23	10
North	40	11	6

Figure 4.45 - Planner survey - Self-reported capacity to respond to and support the agri-food system by MMAH Municipal Service Office regions

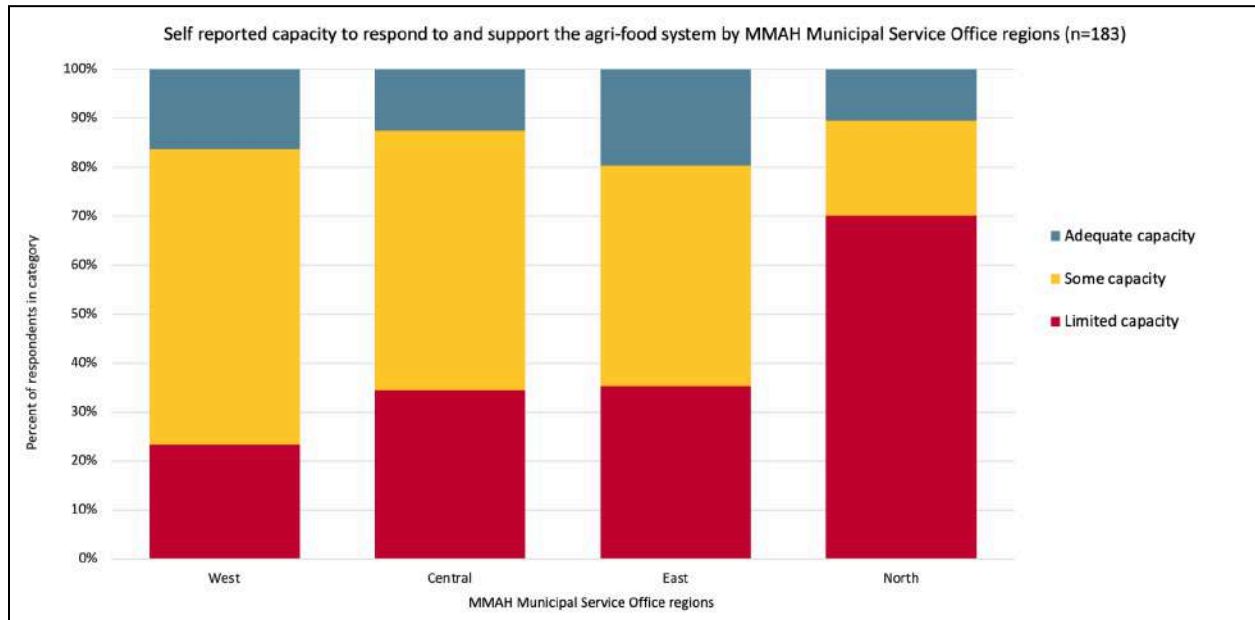


Table 4.14 - Proportional odds logistic regression analysis looking at reported capacity and MMAH Municipal Service Office regions

	Odds Ratio	Coefficient	P-value	Confidence interval	
				2.5%	97.5%
Central	-0.3900607	0.6770158	3.644423e-01	-1.239016	0.4513516
East	-0.2551444	0.7748046	5.082603e-01	-1.015003	0.5002274
North	-1.6909421	0.1843458	3.768387e-05	-2.513407	-0.9004990

Appendix K includes the R script and resulting statistical analysis associated with this section of the report.

4.7.1.4 Urban versus rural classification and reported capacity

Table 4.15 and Figure 4.47 depict self-reported capacity to respond to and support the agri-food system by urban and rural classification. Figure 4.46 shows that respondents from urban municipalities are more likely to report higher levels of capacity for agri-food systems planning. Looking at the results from the Chi-squared analysis the p-value is less than 0.05 which indicates that there is a statistically significant relationship between reported capacity and a municipality's classification as urban or rural. This means that respondents from urban and rural municipalities reported different levels of capacity than they would by chance alone.

- Pearson's Chi-squared test: X-squared = 8.6824, df = 2, p-value = 0.01302

Proportional odds logistic regression can be used to investigate how and to what degree reported capacity and urban versus rural classification are associated. The regression model summarized in Table 4.16 explains that respondents from rural municipalities are 2.4 times more likely to report lower levels of capacity than respondents from urban municipalities.

Table 4.15 - Self-reported capacity to respond to and support the agri-food system by urban and rural classification			
	Limited capacity	Some capacity	Adequate capacity
Urban	16	30	12
Rural	63	47	15

Figure 4.46 - Planner survey - Self-reported capacity to respond to and support the agri-food system by urban and rural classification

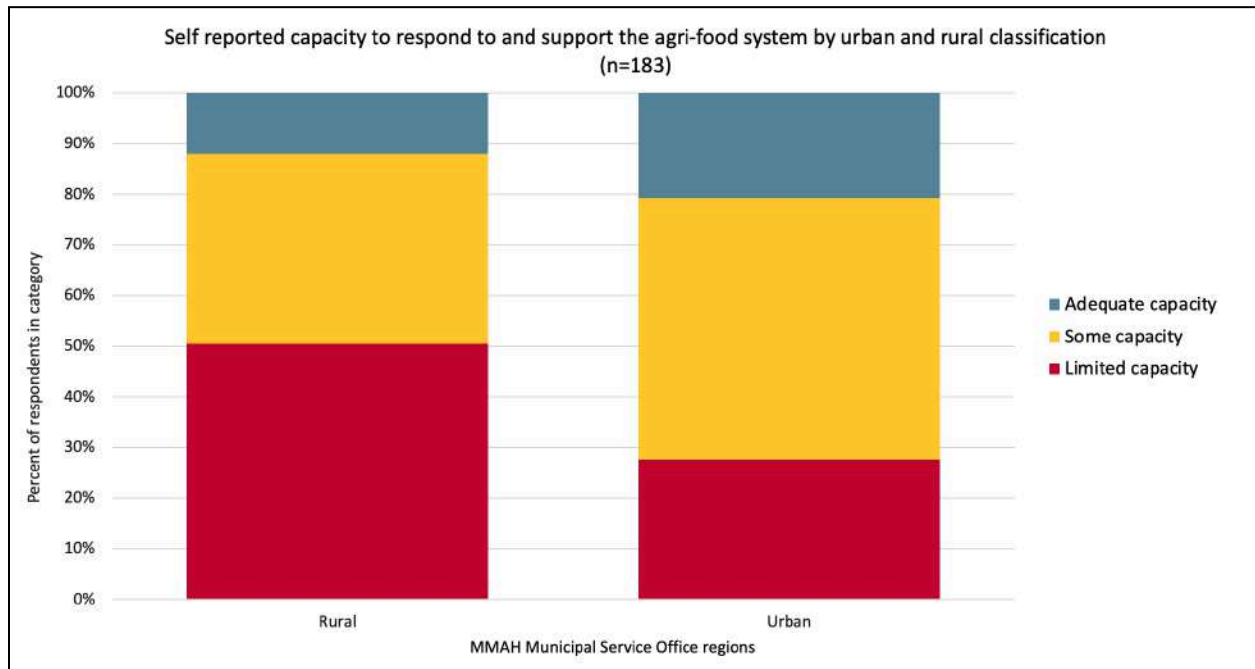


Table 4.16 - Proportional odds logistic regression analysis looking at reported capacity and urban versus rural classification

	Odds Ratio	Coefficient	P-value	Confidence interval	
				2.5%	97.5%
Rural	-0.8688511	0.4194332	4.180413e-03	-1.470174	-0.278560

Appendix K includes the R script and resulting statistical analysis associated with this section of the report.

4.7.1.5 Implications of varied capacity

Sections 4.7.1.1 through 4.7.1.4 effectively highlight key differences in municipal agri-food systems planning capacity across Ontario. Respondents were more likely to report higher levels of capacity if the municipality where they worked had in-house planning staff, was an upper-tier municipality, was located in southern Ontario (MMAH Municipal Service Office West, Central, or East), or was classified as urban. This finding is particularly relevant for the Provincial government, as it provides evidence that the planning function of upper-tier municipalities is essential to the long-term viability and sustainability of the agri-food sector. Conversely, this analysis provides evidence that tailored policy and program initiatives are needed to strengthen agri-food systems planning capacity in:

- Municipalities that do not have in-house planning staff;
- Single- and lower-tier municipalities;
- Municipalities located in northern Ontario; and
- Rural municipalities.

4.8 Summary of Chapter 4

Chapter 4 focuses on Research Question 2: *Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?* This research question is further explored through three sub-questions:

- *What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?*
- *Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?*
- *How does municipal agri-food systems planning capacity vary across the province?*

This chapter provides an overview of who participated in the research, followed by a discussion of contextual understandings of agri-food systems and contemporary agri-food systems challenges as discussed by the research participants. The remainder of the chapter focuses on factors that impact municipal agri-food systems planning capacity, the ability of municipalities to

implement Ontario's agri-food systems land use policies, and an exploration of self-reported municipal agri-food systems planning capacity across the province.

Primary data collection efforts for this project resulted in 196 planner surveys, 230 elected official surveys, and 68 interview transcripts. In total, 290 of 444 municipalities participated in this research through at least one of the data collection methods. Upper-tier municipalities had the highest participation rate (90%), followed by single-tier southern municipalities (83%), single-tier northern municipalities (70%), and lower-tier municipalities (57%). Furthermore, participation rates across all four MMAH Municipal Service Office regions were similar. Northern Ontario had the highest participation rates with 70% of municipalities completing at least one data collection method. In western and central Ontario 64% of municipalities participated in at least one data collection method, and in eastern Ontario participation in at least one data collection method was 61%.

Findings from this research provides insight regarding how agri-food systems are perceived, valued, and interacted with by municipal planning staff and elected officials, in addition to discussing contemporary agri-food systems planning issues and challenges facing Ontario municipalities. The key issues identified by respondents include: (1) Continued pressures on the agricultural land base; (2) Ongoing challenges related to agriculture in the rural area; (3) Changing nature of agriculture; (4) Land use planning framework in Ontario; (5) Larger food systems challenges; and (6) A growing knowledge gap.

Furthermore, this research identified a number of factors related to municipal agri-food systems planning capacity, including: staff and council knowledge of agri-food systems, planning service delivery, collaboration between planning and other municipal departments, relationships with external actors (including other municipalities and agri-food systems stakeholders), municipal council's priorities and approach to decision making, and individual or organizational beliefs and convictions. These factors are grouped into four overarching themes: (1) planning department structure and personnel, (2) relationships with other municipal departments and external actors, (3) the land use planning framework in Ontario, and (4) commitment to local and regional agri-food systems.

Findings from this research confirm that municipal capacity to support agri-food systems planning in Ontario is variable. Of 183 respondents, 156 (85%) indicated that their municipality had less than adequate capacity to respond to and support the agri-food system. Respondents were more likely to report higher levels of capacity if the municipality where they worked had in-house planning staff, was an upper-tier municipality, was located in southern Ontario (MMAH Municipal Service Office West, Central, or East), or was classified as urban. This variability is evident in the reported knowledge related to key agri-food systems land use policies as well as the number of agri-food systems related initiatives a municipality supports. The next chapter will explore municipal agri-food systems planning initiatives discussed by respondents.

Chapter 5: Municipal Initiatives to Support Agri-food Systems in Ontario

5.1 Purpose of Chapter 5

As discussed in Chapter 4, this research confirms that municipal capacity to support agri-food systems planning in Ontario is variable. The factors which contribute to municipal capacity are grouped into four overarching themes: department resources and characteristics, relationships with other municipal departments and external actors, the role of municipal councils and upper-levels of government, and a commitment to local and regional agri-food systems. This capacity positions municipalities to facilitate agri-food systems planning initiatives including the use of regulatory and non-regulatory tools, and leveraging partnerships in support of agri-food systems planning. In this context, Chapter 5 explores municipal agri-food systems planning initiatives discussed by respondents and addresses Research Question 3: *What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?*

As outlined in Chapter 2, agri-food systems planning is complex and addresses not only matters of land use but also economic, social, and environmental wellbeing. While the provincial government provides the overarching policy framework, municipal governments are responsible for implementation within their jurisdictions—and may go beyond minimum provincial standards. This flexibility enables local governments to pursue a range of policies, programs, and plans to support and respond to the needs of the agri-food sector. In this context, municipal land use planning staff play an important role in creating, facilitating, supporting, and implementing a wide array of agri-food systems planning initiatives (beyond what may traditionally be conceptualized as part of the domain of community and land use planning).

The chapter begins with an overview of the uptake of specific agri-food systems planning initiatives (Section 5.2), followed by a discussion of their impetus and evolution (Section 5.3), and concludes with detailed examples from municipalities across Ontario (Section 5.4). This chapter draws on data from all three primary data collection methods, including the elected

official survey questionnaire, planner survey questionnaire, and planner semi-structured interview. Desk research - including the review of municipal websites and documents, and news articles - was used to validate and elaborate on initiatives identified through primary data collection.

A planner from central Ontario reflected on the value of this research in identifying options for municipal planners to consider:

People often think you need to have this big budget to be able to focus on rural and agricultural issues. But you can take small baby steps. And there are initiatives that don't require a lot of money. It just might be somebody planning an initiative and carrying it out. I think this research has the capacity to influence some real change, because regardless of what size you are, or what budget you have, there are things the planning department can do [to support the agri-food system]. (Central, UT, Planner Interview)

5.2 Municipal agri-food systems planning initiatives by the numbers

The planner survey asked respondents whether their municipality had implemented various agri-food systems planning initiatives, including: an agricultural strategy, climate change strategy, biodiversity strategy, water quality programs, food strategy, “buy local” programs, agritourism or farm tours, agricultural workforce development initiatives, and economic development programs supporting agriculture. The response options for this question included: ‘yes’, ‘no’, ‘in progress (steps being made to implement)’, ‘planned (adopted as direction but has not yet proceeded)’, and ‘not sure’. It should be noted that the interview process revealed some inconsistency in how initiatives were interpreted. For instance, some respondents viewed Official Plan policies as constituting a “climate change strategy,” while others believed such a strategy should exist as a separate, stand-alone document.

Table 5.1 summarizes the most commonly reported agri-food systems planning initiatives from the planner survey. The five most common initiatives were economic development initiatives related to growing/supporting the agricultural sector (42%), “buy local” programs (42%), water quality programs, (37%), agritourism/food and farm tours (32%), and climate change strategies

(24%). Less common initiatives include biodiversity strategies (3%), food strategies (11%) and agricultural strategies (12%). Table 5.1 also includes the percent of respondents who indicated they were unsure about specific initiatives. Notably, water quality programs and workforce development initiatives were also the least well understood, with 15% and 17% of respondents respectively unsure of their municipality's status. In contrast, fewer than 10% were unsure about agricultural advisory committees, agricultural strategies, or climate change strategies.

Table 5.1 - Agri-food systems planning initiatives reported through the planner survey questionnaire, all municipalities (n=185)					
	Yes	In progress	Planned	Not sure	No
Economic development initiatives related to growing/supporting the agricultural sector	42%	9%	3%	11%	35%
Buy local programs	42%	8%	2%	13%	36%
Water quality programs	37%	4%	1%	15%	42%
Agritourism/food and farm tours	32%	8%	1%	10%	49%
Climate change strategy	24%	24%	5%	8%	39%
Agricultural advisory committee	18%	3%	0%	3%	76%
Agricultural workforce development/labour initiatives	16%	2%	0%	17%	65%
Agricultural strategy	12%	5%	3%	7%	72%
Food strategy	11%	4%	1%	12%	72%
Biodiversity strategy	3%	6%	3%	11%	76%

Regional variation in the implementation of initiatives is also notable. Tables 5.2 and 5.3 summarize responses from southern and northern Ontario, respectively. RRespondents from northern municipalities were generally less likely to report that their municipality had implemented—or was in the process of implementing—agri-food systems initiatives. Interestingly, respondents from northern Ontario were also less likely to be unsure about the status of initiatives. One possible explanation for this is that municipalities in northern Ontario generally have a smaller staff complement and respondents often held multiple roles and responsibilities across multiple municipal service areas (see Section 4.5.1.4 of Chapter 4 for a more detailed discussion).

Table 5.2 - Agri-food systems planning initiatives reported through the planner survey questionnaire, southern Ontario municipalities (n=128)					
	Yes	In progress	Planned	Not Sure	No
Economic development initiatives related to growing/supporting the agricultural sector	52%	6%	3%	9%	28%
Buy local programs	51%	6%	2%	13%	27%
Agritourism/food and farm tours	41%	7%	0%	12%	40%
Water quality programs	40%	5%	1%	16%	38%
Climate change strategy	31%	27%	5%	8%	27%
Agricultural advisory committee	25%	4%	0%	3%	67%
Agricultural workforce development/labour initiatives	20%	3%	0%	21%	55%
Agricultural strategy	16%	8%	3%	8%	63%
Food strategy	13%	5%	1%	14%	65%
Biodiversity strategy	4%	7%	5%	13%	70%

Table 5.3 - Agri-food systems planning initiatives reported through the planner survey questionnaire, northern Ontario municipalities (n=57)

	Yes	In progress	Planned	Not Sure	No
Water quality programs	32%	0%	2%	14%	53%
Buy local programs	21%	12%	2%	11%	54%
Economic development initiatives related to growing/supporting the agricultural sector	19%	14%	2%	14%	51%
Agritourism/food and farm tours	14%	9%	2%	7%	68%
Climate change strategy	9%	18%	4%	7%	63%
Food strategy	7%	2%	0%	7%	84%
Agricultural workforce development/labour initiatives	7%	0%	0%	7%	86%
Agricultural strategy	4%	0%	2%	5%	89%
Agricultural advisory committee	2%	4%	0%	9%	86%
Biodiversity strategy	2%	0%	0%	4%	95%

5.3 Discussing municipal agri-food systems planning initiatives

Through the interview process, respondents elaborated on context-specific drivers behind agri-food systems planning initiatives in their municipality. These discussions explored why certain initiatives were pursued, who was involved, what role the planning department played (noting that in some cases planning staff played a minor role), challenges faced, and the outcomes achieved. Respondents often highlighted the unique characteristics of their local

agri-food sector (e.g., land base, key agri-food systems actors) and available resources as being key factors in influencing which initiatives were feasible.

Ontario's agri-food landscape is diverse, and accordingly, municipal roles and approaches to agri-food systems planning vary. For example, the Guelph-Wellington Our Food Future initiative focused on integrating the primarily urban municipality of Guelph with surrounding rural and agricultural areas found in Wellington County to create a regional circular food economy. In Cornwall, a primarily urban municipality in eastern Ontario, focus in recent years has been on strengthening policy support for urban and controlled environment agriculture. To contrast this, the Region of Niagara supports a range of initiatives aimed at protecting the Niagara Peninsula Tender Fruit and Grape Area and supporting on-farm diversification associated with a thriving agri-tourism industry.

While all three of these examples were influenced by the very real, tangible differences in agri-food systems across Ontario, they were also influenced by how municipal staff and councils conceptualize and understand agri-food systems in their municipality. A good illustration of how powerful individual or institutional understandings of agri-food systems are was provided by a respondent from eastern Ontario who explained that in their municipality, despite over 80% of the land base being rural, council was generally more focused on urban growth and that in their viewpoint "the rural area is mostly a place for wealthier residents to live and commute... or a midway point between urban centres and cottage country" (East, ST, Planner Interview). In this same municipality, the 2021 census of agriculture reports over 30,000 hectares of farmland, 185 farm operators, and 36 million in total gross farm receipts (in the calendar year prior to the census). Section 4.3.1 of Chapter 4 provided a more detailed discussion regarding how respondents perceived, valued, and interacted with agri-food systems in their municipality.

In addition to local context and individual/institutional understandings of agri-food systems, municipal agri-food systems planning capacity plays a critical role in determining which initiatives are pursued. Interview and survey data showed that municipalities with more capacity were able to support a greater number of initiatives (see Figure 4.42) and were more proactive in addressing emerging challenges and maintaining strong relationships with key partners.

5.3.1 Roles and responsibilities

The interview process revealed that planning staff play a variety of roles related to municipal agri-food systems planning initiatives. While some initiatives were led by planning staff, many involved collaboration with multiple municipal departments and external organizations.

Depending on the initiative and local context, planning staff provided technical advice, facilitated interdepartment coordination, or supported external stakeholders. Section 4.5.2 of Chapter 4 provides a more detailed discussion regarding relationships between municipal planning staff and other municipal departments as well as external organizations.

One challenge of collaborative agri-food planning is ownership is the question of who leads, monitors, or implements the initiative? Respondents noted that because agri-food systems planning initiatives often bridge multiple municipal departments there is a risk of diffused responsibility - everyone assumes that someone else will act. An example of this was provided by a planner from eastern Ontario who discussed that their municipality had prepared a natural environment plan which addresses climate change mitigation and adaptation but that they were facing challenges implementing and updating the plan because of shared responsibility. The planner explained: “the plan is done - the issue is that we don’t have someone who is dedicated to implementing it” (East, ST, Planner Interview).

Similarly, a planner from central Ontario described that a climate and agriculture-focused plan was stalled in their municipality as a result of unclear ownership:

The problem that we've come to is who takes ownership of the plan? It's a great plan that focuses on climate change and agriculture. But the challenge is it doesn't really sit in economic development - there are pieces of it for economic development, it doesn't really sit in planning - there are pieces of it for planning, and the CAO's office has a sustainability team but they are tapped out and don't really have the bandwidth right now. So that's been the problem. It's great it exists, but it's just sitting on the shelf because nobody has taken ownership of it. (Central, UT, Planner Interview)

Several respondents echoed this concern, noting that a lack of leadership can hinder not only implementation and monitoring but also the early development of agri-food systems planning

initiatives as well. In this context, respondents often reflected on a wide-range of actors (elected officials, staff, external organizations, the agri-food sector, the public) when discussing the identification and evolution of agri-food systems planning initiatives in their municipality.

5.4 Examples of agri-food systems planning work

Through both the survey and interview process, respondents were asked to identify and discuss specific agri-food systems planning initiatives in their municipality. While the purpose of this research was not to compile a comprehensive list of all municipal agri-food systems planning initiatives in Ontario, the research aims to understand what activities municipalities are undertaking in support of local and regional agri-food systems. In this chapter, initiatives identified by respondents have been grouped into six categories, including: land use planning policy, agricultural and food strategies, economic development initiatives, providing resources to the agri-food sector, training and education, and environmental stewardship. These categories speak to the breadth and diversity of agri-food systems planning initiatives that municipal planning departments play a role in supporting. Throughout this section, municipal examples and mini case studies are provided to offer tangible illustrations of how municipalities are supporting and responding to the agri-food sector.

5.4.1 Land use planning policy

Perhaps the most straightforward, and expected type of initiatives that municipal planning departments are undertaking, are those related to land use planning policy. Respondents from across Ontario acknowledged several ways land use planning policies interact with the agri-food sector and discussed the potential for land use policies to both support and/or hinder local and regional agri-food systems. While the Province provides the land use planning framework, municipalities are responsible for local implementation. In this context, municipalities can go beyond the minimum standards provided by provincial policy so long as doing so would not conflict with another provincial policy. Municipal planning staff play a lead role in land use policy updates and creation.

Respondents identified a range of land use policies affecting the agri-food sector, including settlement area boundary expansions, additional residential units, horse-drawn reliant

communities, agricultural impact assessments, lot creation (e.g., surplus farm dwelling severance), minimum lot size for agricultural use, on-farm diversified use, urban agriculture (e.g., food production of public land, rooftop agriculture), controlled environment agriculture, agricultural systems, and farm work housing, among others. In seeking to effectively implement supportive land use policy, planning staff and elected officials must understand the needs, challenges, and priorities of the local agri-food sector. The following paragraphs highlight specific policy areas where municipalities may choose to tailor their own local approach.

Several respondents discussed their municipalities' effort to prevent farmland loss through responsible growth management policies. More specifically, respondents discussed encouraging infill development and intensification through density targets and firm settlement boundaries. While not explicitly an agricultural land use policy, growth management plays an important role in containing urban expansion and preserving agricultural and environmental lands. Waterloo Region's Countryside Line is an excellent example of a policy approach which sets a firm settlement boundary and protects rural and agricultural lands by encouraging intensification and infill, reducing pressure from urban sprawl. A respondent from Waterloo Region reported:

Our council supports a firm Countryside Line. Our municipality does not sprawl and is one of Ontario's most intensification-oriented urban centres. By growing within the existing settlement boundary, we do not sprawl onto the Townships' land, and also protect the Waterloo Moraine. We are a 'protector of neighbouring agriculture' by sticking to strong urban practices. (West, LT, Elected Official Survey)

The City of Hamilton is another example of a municipality where council and planning staff are working together to support strong growth management practices, including a frozen urban boundary. A respondent from Hamilton reported that in their municipality:

The importance of agriculture clearly came up during the most recent debates and discussions around how the city should grow in the context of the urban boundary expansion and the potential loss of agricultural lands, and ultimately led to Council's decision not to expand the urban boundary. (West, ST, Planner Interview)

Another way municipal land use planning policies can protect agricultural areas is through the identification and designation of prime agricultural areas. While the Provincial government provides tools to support municipalities undertaking this work - including the Land Evaluation and Area Review (LEAR) methodology, Agricultural Land Evaluation System (ALES) methodology, and the Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe - these guidance documents provide options and flexibility for municipalities to consider. For example, in identifying prime agricultural areas, as recommended by the LEAR methodology, municipalities have the option to review and add "candidate areas" to the Prime Agricultural Area designation. Furthermore, municipalities can designate lands where there is a local concentration of farms that exhibit characteristics of ongoing agriculture even when the lands did not receive a high LEAR score (as directed by the PPS definition of Prime Agricultural Areas). Peterborough County is an example of a municipality that has added "candidate areas" to the Prime Agricultural Area designation (County of Peterborough, 2020). In addition to Prime Agricultural Areas, municipalities are also able to identify local Specialty Crop Areas - which receive the highest level of protection for agricultural lands in Ontario. Grey County and Lambton County are two examples of municipalities who have pursued the identification of municipal Specialty Crop Areas in partnership with the Province.

Planning policies which consider horse-drawn reliant communities are another way for municipalities to support the agri-food sector. Several respondents discussed Amish and Mennonite communities as a key part of local and regional agri-food systems. In this context, some municipalities have implemented policies which provide special consideration for horse-drawn reliant communities, including the Region of Waterloo, Wellington County, Perth County, Bruce County, Grey County, County of Renfrew, and Township of Black River-Matheson, among others. While this policy approach may have been more common in southwestern Ontario historically, increasing farmland prices and pressures on farmland have resulted in migration of horse-drawn reliant communities to other parts of the province with viable agricultural land. The most typical examples of policy flexibility specific to horse-drawn reliant communities include additional consideration and permissions for institutional uses (e.g.,

churches, schools and cemeteries) within a distance that would be appropriate to travel by a horse-drawn vehicle, as well as the provision for horse tie-ups in settlement areas.

Housing for farm workers is another land use policy area that some municipalities are working to better address. In provincial policy, housing for farm workers is considered an agricultural use (as specified in the definition for agricultural uses in the PPS) and as a result municipalities are left to develop local approaches that best meet the needs of the agri-food sector in their geography. That being said, many respondents shared that their municipality had not yet undertaken work related to housing for farm workers - an issue that became increasingly urgent as a result of COVID-19 and challenges associated with bunk-house style accommodations for farm labour. The City of Hamilton is an example of a municipality that is looking to revisit and amend local land use policies to respond to changing agri-food sector needs related to farm worker housing. In 2022, the City of Hamilton Planning and Economic Development Department published a discussion paper which looked to explore alternatives for farm worker housing which address the housing needs of the agricultural sector while balancing the long-term protection of agricultural lands (City of Hamilton, 2022). Key issues explored in Hamilton's discussion paper include: the number of farm labour residences permitted per lot, maximum gross floor area per individual farm labour residence, farm labour residence built form (e.g., temporary or permanent structures), and private servicing considerations. Other municipalities where respondents discussed land use planning policy related to farm worker housing include Niagara, Kingsville, and Bayham.

Land use planning policy also has a role to play in considering alternative or emerging forms of agriculture. Several respondents from western Ontario municipalities spoke to the need for more strategic planning related to the greenhouse industry and intensive specialty crop production. For example, one respondent explained:

A greenhouse strategy is something we would like to work on at some point in the future. We will be looking at, you know, the degree to which the municipality is able to provide, call it a policy regime that is conducive, or that is attractive, to bringing more greenhouse industry, to the community and finding the kind of sweet spots are optimal places where that growth, that industry might occur. (West, ST, Planner Interview)

In an urban context, respondents discussed the importance of supporting urban and controlled environment agriculture through land use planning policy. Agricultural uses are typically permitted in rural and agricultural designations/zones within municipal planning documents. However, there is growing interest in permitting and supporting agricultural uses within settlement areas. New technologies which allow for the indoor production of food mean that some agricultural production may be better suited to industrial areas where water and hydro services are available to meet their needs. It is relevant to consider that indoor or controlled environment agriculture may not be the best use of prime agricultural areas as their production is not dependent on soil quality or outdoor growing conditions. For example, the City of Cornwall Official Plan speaks to supporting new urban-based agricultural food production in addition to preserving traditional agricultural efforts. Building off the Official Plan, Cornwall's zoning by-law permits small-scale urban horticulture and food processing in several employment and industrial zones. The City of Guelph is also looking to support urban agriculture through land use planning policy.

Beyond technology driven forms of urban agriculture, respondents spoke of allowing urban agriculture (e.g., community gardens, incubator farms) throughout multiple areas of the city including infrastructure corridors, institutional properties, and public lands. For example, the City of Guelph's Zoning By-law permits urban agriculture, including community gardens and backyard chickens, within all zones. Similarly, the City of Vaughan Official Plan includes several policies that support urban agriculture and local food production within the built-up environment, including the direction to support opportunities for urban agriculture in all land use designations. In the City of Dryden, planning and economic development staff worked to support the necessary planning approvals for AgriTech North, a controlled environment agriculture social enterprise looking to address food security in northern Ontario, within the built-up area of the municipality.

On-farm diversified use (OFDU) is another policy area discussed by several respondents. On-farm diversified uses were first introduced to land use planning in Ontario through the 2014 Provincial Policy Statement. While several municipalities have updated their local land use planning documents to address on-farm diversified uses, there were also several respondents

who indicated their municipality had not yet done so. For example, in Durham Region, the upper-tier municipality is working with three of the local area municipalities (Brock, Scugog, and Uxbridge) to develop a coordinated approach to updating agriculture-related and on-farm diversified use policies.

Respondents from municipalities who had already implemented OFDU policies spoke to the importance of developing local checks-and-balances to ensure OFDU policies were being used for their intended purpose (to support the economic viability of farms, while protecting farmland). Several municipalities had implemented more stringent policies related to OFDUs than were outlined in provincial policy. For example, several respondents spoke of the need to consider the appropriateness and cumulative impact of OFDUs on the agricultural system and are looking to limit event and wedding venues. In Oxford County, staff have looked to reduce pressure on farm properties and support small business within the rural area by permitting rural entrepreneurial uses on non-farm rural residential properties.

5.4.2 Agricultural and food systems strategies

Agricultural and food systems strategies are another type of initiative pursued by some municipalities in Ontario. At a high-level, an agricultural or food system strategy is a comprehensive plan which looks to support the agri-food system within the municipality's boundaries as well as consider important relationships and synergies with surrounding municipalities. Agri-food strategies often consider both the land base as well as the agri-food network, including businesses, infrastructure, and markets important to the viability of the agri-food system. That being said, the scope, complexity, planning department involvement, and partnerships vary from municipality to municipality.

Respondents indicated that municipal planning departments could play a partnering or supporting role in creating agri-food strategies. In this context, respondents explained that agri-food strategies were often the result of collaboration with external organizations as well as other municipal departments, such as economic development, public health, engineering, and transportation, among others. In municipalities with an established Agricultural Advisory Committee and/or local food policy group, these groups often played a key role in the creation

of the municipal agricultural and/or food system strategy (as well as other agri-food systems planning work). One respondent explained the role of the municipal Agricultural Advisory Committee in the creation of their municipal agricultural strategy:

Our Agricultural Advisory Committee is more focused on planning issues, but we do use them quite a bit for input on agricultural related matters. For example, we just had them provide advice on our agricultural strategy, which is our five year plan to support agriculture in the municipality and is endorsed by the council. That plan is primarily an economic development plan, but it also required a lot of input and consideration for planning. (Central, UT, Planner Interview)

Agricultural and food systems strategies were most common in the Greater Golden Horseshoe as a result of the Growth Plan encouraging municipalities to “implement regional agri-food strategies and other approaches to sustain and enhance the Agricultural System and the long-term economic prosperity and viability of the agri-food sector” (Growth Plan, policy 4.2.6.7). While the Growth Plan encouraged these strategies within the Greater Golden Horseshoe, several municipalities outside the region also considered or implemented similar initiatives. It should be noted that since the data for this project was collected, the Growth Plan has been repealed and replaced by the 2024 Provincial Planning Statement, which does not carry forward a policy to encourage municipalities to implement an agri-food systems strategy.

Some respondents discussed preparing initiatives or strategies related to specific aspects of agri-food systems, including climate change, economic development, emergency preparedness, or specific types of agricultural production/technology (e.g., irrigation). In this context, planning staff often played an advisory or review role. Examples of agri-food strategies from across Ontario of varying scopes and approaches are highlighted below:

- [London Urban Agriculture Strategy \(2017\)](#)
- [Guelph-Wellington Food Security Action Plan \(2022\)](#)
- [Hamilton Food Strategy - Health, Sustainable, and Just Food for All \(2016\)](#)

- [Grown in Niagara - Agriculture Economic Development Action Plan for the Niagara Region \(2023\)](#)
- [City of Toronto Public Market Action Plan \(to be released 2025\)](#)
- [Golden Horseshoe Food and Farming Alliance Action Plan \(2021 - 2026\)](#)
- [York Region Agriculture and Agri-food Sector Strategy \(2024-2027\)](#)
- [Growing Agri-food Durham, A Five-Year Plan to Grow the Agri-food Industry in Durham Region \(2023-2027\)](#)
- [Kawartha Lakes Agriculture and Food Action Plan \(2020-2024\)](#)
- [City of Ottawa Rural Economic Development Strategy \(2022\)](#) (Strategic Priority 4 speaks to innovation in agriculture and agri-food production)
- [Haliburton - Food Systems and the Official Plan \(2015\)](#)
- [Greater Sudbury Food Strategy \(2017\)](#)
- [Emergency Food Plan for Thunder Bay \(2023\)](#)

5.4.3 Economic development initiatives

Economic development initiatives related to agri-food systems planning were also commonly discussed by respondents. Municipalities across Ontario are engaging in a wide range of activities including, food and farm tours, “buy local” programs (e.g., maps, webpages, and social media campaigns), harvest dinners, farmers markets, workforce development, land access matching programs, local food procurement, and other programs to support and celebrate local and regional food. These types of initiatives bring greater awareness and support to the agri-food sector and benefit agricultural operators and organizations in terms of marketing and promotions. In this context, municipal planning staff often play a supporting role, with municipal economic development staff or local economic development corporations taking the lead. Supporting roles respondents discussed include facilitating mapping work, coordinating between multiple stakeholder groups, assisting in the identification of agri-food systems assets, and addressing land use planning related barriers.

As outlined in Chapter 4, the relationship between planning and economic development was widely recognized by respondents as being an important part of municipal agri-food systems planning. More specifically, aligning planning and economic development staff helps balance land use regulation with economic growth initiatives. Furthermore, economic development initiatives can play an important role in informing and/or supporting land use planning policy and plan creation. A one northern Ontario respondent noted:

In the past people never really thought about it. [Agriculture] was just something that was there. But I think we've come to the point where we need to start pushing it and supporting it and promoting it a lot more. That's where our economic development planning comes in. (North, ST, Planner Interview)

In terms of types of initiatives, “buy local” programs were the most frequently discussed by respondents - including marketing campaigns, mapping platforms, seasonal events, food and farm tours, and local product baskets. For example, a respondent from northern Ontario explained:

We have curated packages where we sell a picnic basket that's full of the local product from the region and we promote - come pick up this basket and do this hike and have a picnic with all of the great food that we have here. (North, ST, Planner Interview)

Several other respondents spoke of the opportunity to connect agri-food tourism with other tourism opportunities in their municipality including festivals and special events, historic sites, recreation and sport, and natural and conservation destinations. The [Farmstand 40 bike route](#) in Powassan is an example of the marriage between recreational and agri-food tourism that municipal staff and councils can leverage to support their local agri-food sector without needing a large budget. Low-budget economic development initiatives were most commonly discussed by smaller municipalities, particularly those in northern Ontario. For example, one respondent explained:

A couple years ago, our economic development committee was looking at ways to promote farm stands and small-scale agriculture. So we created a Facebook page and some informational brochures and materials about our farm stands and where they are

located. Basically we created a central spot for information about our local agri-food businesses. And it didn't have a huge budgetary component because it was just staff and volunteers running the social media and then a bit of printing. Maybe we spent a couple thousand over the course of a couple of years. (North, ST, Planner Interview)

Respondents also acknowledged the importance of partnerships and collaboration in helping to build capacity and support economic development initiatives. In the Thunder Bay District, the Thunder Bay + Area Food Strategy organization, supported by municipal staff, provides several “buy local” resources including the [Thunder Bay In Season](#), which highlights seasonal products and where to purchase them locally. [Buy Algoma](#) is a similar initiative in Algoma District which is delivered by the Rural Agri-Innovation Network and supported by some of the local area municipalities.

Respondents from eastern, central, and western Ontario also highlighted a range of municipal “buy local” initiatives. Some examples include [Taste of the Valley in Renfrew County](#), [Flavours of Dufferin: Farm Tours and Culinary Adventures](#), [Perth County Discover More Flavour Farm Gate Map](#), [Brant Eats](#), [Eat Local Huron](#), [Savour Ottawa](#), [Kawartha Choice Farm Fresh](#), and [Wellington County's Taste Real program](#). Many municipalities support multiple “buy local” programs, often combining marketing campaigns, social media, mapping platforms, farm tours, and in-season guides. For example, Grey County supports several tourism initiatives related to local agri-food systems including: [Made in Grey](#), [Local Food On Menu](#), [On-Farm Experiences](#), and [Gather in Grey](#) (an initiative which looks to showcase local farm-to-fork stories and experiences).

Additionally, some municipalities have developed agri-tourism guides which aim to support farmers looking to diversify their operation through agri-tourism opportunities, including:

- [Agri-tourism A Guide for Farmers in Burlington \(2020\)](#)
- [Town of Essex, Agri-tourism Toolkit \(2022\)](#)
- [Growing Agri-tourism A Toolkit for Planning and Developing Your Agri-tourism Business in Simcoe County \(2023\)](#)

All three of these guides speak to land use planning considerations and the importance of working with municipal planning staff with regards to the relevant land use policies and any required planning applications.

Community Improvement Plans (CIPs) are another economic development tool being used by several municipalities. CIPs are a tool that provides funding and program support for redevelopment within targeted areas of a municipality. Specifically CIPs provide financial support to undertake development, restoration, and reinvestment activities. In the case of agriculture and agri-food systems municipalities can identify specific types of activities which are eligible for funding (e.g., agri-food innovation, agri-tourism, improved signage). For example, Bruce County's [Spruce the Bruce](#) CIP supports local businesses, community partners, and public experiences through grants for agri-food innovation, product and experience development, and community marketing and signage. In [Whitewater Region CIPs](#) are used to provide funding for economic development and stewardship related activities including cattle fencing, agriculture value-added activities, and agricultural buffers. A respondent explained that in addition to Whitewater, other municipalities in eastern Ontario were considering using CIPs to support activities that might typically be within the purview of the local conservation authority. The respondent explained:

Some of the municipalities in the Region have taken a really proactive approach to CIPs and are addressing programs that normally would be covered by conservation authorities. Our municipalities are trying to find a way to have the same effect. For example, a water quality CIP to put up livestock fencing to keep cattle out of creeks and other environmentally sensitive areas. It's not really economic development, it's more just local support for the agricultural community. Helping them how we can. (East, UT, Planner Interview)

Other examples of municipalities who have provided support to the agri-food sector through CIPs include Town of Stouffville, Town of Lincoln, Elgin County, Township of Springwater, Haldimand County, and Norfolk County.

5.4.4 Providing resources to the agri-food sector

Municipal planning departments also play a role in the identification and provision of resources to support the agri-food sector. Respondents described actions such as identifying public lands for agri-food related activities (e.g., food production, farmers markets), supporting local and regional agri-food processing facilities, providing financial support for environmental stewardship efforts, investing in municipal agri-food system infrastructure (e.g., municipal farms, processing and cold storage facilities), and providing staff resources to external agri-food organizations. While not all municipalities own agricultural land or have capacity to make financial contributions, many municipalities own public land related to infrastructure and institutional uses that may be leveraged in the context of agri-food systems planning. Some respondents also discussed providing in-kind support such as staff time or access to municipal meeting spaces. Out of the six different initiative categories identified, providing resources to the agri-food sector was the least frequently discussed, however respondents from across all four regions of Ontario provided examples of this type of work being undertaken in their municipality. In this context, municipal planning departments often played a facilitative or partnering role supporting the agri-food sector.

Providing staff resources - including planning, economic development, and public health staff, among others - is an important way to build capacity between municipal staff and agri-food systems organizations. Examples of providing staff resources include having staff or elected officials attend and support the work of the Agricultural Advisory Committee and/or local food policy group. Several respondents discussed relationship building with local agri-food organizations as a key contributor to municipal agri-food systems planning capacity. A respondent from the City of Greater Sudbury explained that in their municipality:

We have a number of city staff sitting on the Food Policy Council as resource members. We have someone from tourism, for example, or Children's Services, dealing with food access, and then we have staff from the planning services sitting on the Council as a resource member as well. (North, ST, Planner Interview)

Similarly, in the County of Peterborough, a planning staff member sits on the [Peterborough Alliance for Food and Farming](#). Beyond providing staff resources to municipal agri-food organizations, some municipalities have established an agri-food specific staff position such as an agricultural liaison officer, agricultural development officer, or agri-business development specialist (see Section 4.5.1.4 of Chapter 4 for a more detailed discussion). Halton Region, Peel Region, York Region, and Kawartha Lakes are examples of municipalities that have specifically created an agri-food specialist position. In a municipality with two agricultural specialists on staff, the respondent explained their role:

We are the leads on agriculture and a lot of the rural profile. So we are the staff resources lead to our Agricultural Advisory working group, and we provide staff support for the Golden Horseshoe Food and Farming Alliance, as well. We also have internal partnerships like the Food Action Council and are staff resources to a variety of agricultural related groups. In terms of policy work, we lead the Official Plan review on the agricultural policies as well as implementing any of the policies or projects identified in the Official Plan, such as leading an agricultural strategy or land evaluation area review [LEAR] and we will provide comment on certain types of development applications from agricultural perspective and review agriculture impact assessments. (Central, UT, Planner Interview)

Another respondent, from a different municipality, explained:

The agricultural development officer role has shifted slightly over time. The role always included commenting on and support for any agricultural issue that the municipality was dealing with. For example, the creation of the Nutrient Management Act. There is also the aspect of supporting local agri-food organizations and commenting on land use planning policy including both the Official Plan and Zoning Bylaw, but site specific applications as well. (East, ST, Planner Interview)

While a handful of municipalities have developed an agricultural specific role on staff, it was more common for respondents to discuss an unofficial agricultural role, where a staff person

may not have an agricultural specific title, but their work substantially relates to supporting the local agri-food sector. One respondent explained:

Whoever is the staff liaison to the Agricultural Advisory Committee tends to take on the role as the agricultural person within our planning team. I'm not the first person in my department, and I won't be the last. I'm responsible for other things as well - aggregates, waste disposal, and some infrastructure files. But agriculture is certainly a big part of my portfolio, and even though I'm not a dedicated agricultural person, most of those issues tend to fall on my plate. (Central, UT, Planner Interview)

In addition to providing staff resources, respondents also discussed municipal initiatives to identify public lands for agri-food related activities, such as community gardens, farmers' markets, and urban farms. For example, a respondent from northern Ontario spoke about an initiative in their municipality to identify publicly owned lands that farmers could use to grow hay:

The city is fairly flexible in allowing short-term leasing of lands to assist agricultural operations. So we've leased out land in the past on a short term rental, where [farmers] can basically come in and just cut [hay], we've outlined areas where they can and cannot cut due to servicing that's in the area. ... We want to do everything we can to see our agricultural sector successful. (North, ST, Planner Interview)

Similarly, the City of Toronto supports several urban farm pilot projects within hydro corridors through a Community Engagement and Entrepreneurial Development (CEED) garden program, including the Flemo Farm and Malvern Urban Farm. In the City of Ottawa and Huron County, the municipality rents publicly owned farmland to agricultural organizations for demonstration fields and test plots. In Huron, the [Huronview Demo Farm](#) is rented for one dollar a year to the farmer-led Huron Soil and Crop Improvement Association to test and demonstrate sustainable agricultural practices. Similarly, the [Ottawa Smart Farm](#) is a partnership between the City of Ottawa and Invest Ottawa that offers space to develop, test, and demonstrate agri-tech innovation and provides training and educational opportunities for producers. Several other

urban municipalities, including the Cities of Sault Ste. Marie, North Bay, Guelph, and Kingston support community garden programs on municipally owned lands.

Respondents also spoke to the need for local and regional support for agri-food assets, such as processing (e.g., community kitchens, abattoirs), cold storage, and product development support. The [Ontario Agri-food Venture Centre](#) in Northumberland is a notable example of a municipally supported agri-food asset that provides a variety of resources to the agri-food sector, including cold storage and processing facilities. The Venture Centre also assists local-food businesses with product development, marketing, packaging, and food-safety training among other things. In Grey County, the municipality supports Grey County Agricultural Services, a locally driven agricultural extension organization mandated to promote sharing of agricultural information and provide resources to agricultural and rural organizations.

5.4.5 Training and education

Another category of initiative that municipal planning departments play a role in supporting are those related to training and education. As noted in Chapter 4 there are several knowledge gaps related to agri-food systems planning that municipalities can help to address. Respondents from across Ontario emphasized the importance of learning and experiential opportunities for municipal staff, elected officials and the general public to better understand the agri-food sector. Several respondents also highlighted the need for education and learning opportunities for the agri-food sector to better understand the land use planning process in their municipality. Training initiatives that respondents discussed include field and farm visits, information sheets, pamphlets, webpages, and joint meetings between municipal and agri-food stakeholders.

Respondents indicated that municipal planning departments could play a lead, coordination, or supporting role in delivering training and educational initiatives to address knowledge gaps related to agri-food systems planning. Municipal planning staff are also typically responsible for initiating and leading educational opportunities to help the agri-food sector better understand the land use planning process. Several respondents discussed working with their local Ontario Federation of Agriculture chapter, commodity groups, community agri-food systems organizations, and municipal agricultural advisory committees to gather feedback on key

agri-food systems planning issues and priorities, as well as improve understanding of municipal planning documents and policy approaches among these groups. One respondent explained the topics that might be discussed with the Agricultural Advisory Committee:

So in terms of AAC meetings we have a number of staff who may attend - economic development, business facilitators, as well as the planning policy group - to talk about planning issues, updates to planning policy, and to understand is the agri-food sector running into red tape? And then to discuss - what are the regulations? Why do we have those regulations? Is there an opportunity to look at changing the regulations or updating them? (Central, ST, Planner Interview)

Looking specifically at training and education for the general public, several respondents reflected on the role that these types of initiatives played in building awareness and support for local and regional agri-food systems. These initiatives help the public to understand how the sector functions, what constitutes a normal farm practice, and the importance of local and regional food systems. For example, Grey County's [Share the Road](#) campaign promotes road safety around farm vehicles, including horse drawn vehicles, tractors, and farm implements. Grey County also hosts an annual agricultural conference titled [Ag 4.0](#) which aims to connect agricultural and tech stakeholders on issues facing the agri-food sector. In 2022 the conference focused on climate change adaptation and mitigation through innovative agricultural practices. A respondent from Grey County explained the 2022 conference theme:

The conference looks to address concepts around what technological change looks like and how it affects rural life? ... There's just so much more efficiency over the last 20 years and as a result all sorts of farmers have come up from the southwest and they are able to, with technology, take what would have been considered "okay agricultural land", and it's now yielding really, really well. ... But they're also doing things like taking out the hedgerows. So it is affecting the landscape and it's affecting natural systems. And we hope there's also somebody who is looking at the efficiency of their land and is thinking - we're going to put this back into trees, or we're going to re-naturalise this riparian area near the water, because the technology tells us the yield isn't there.

Open doors and farm days are other examples of municipal initiatives that provide learning opportunities for the public. For example, Kingston and Frontenac County's [Open Farm Days](#) aim to educate consumers about agriculture, increase awareness of farms and restaurants that serve local food, and provide an opportunity for consumers and producers to meet. Similarly, in the Town of Cochrane a farm-to-fork dining event called Dinner in White aims to build awareness of local farm products and celebrate the agri-food sector.

Specific to municipal staff and councils, increased knowledge and awareness about the agri-food sector contributes to more agricultural-responsive approaches and informed decision making. Furthermore, training and educational opportunities foster stronger relationships (e.g., rural residents and agricultural operations, council and agri-food systems stakeholders). The most frequently discussed educational initiatives specific to council and staff were farm tours and cross departmental training opportunities related to agriculture. Several municipalities across Ontario, host annual or bi-annual farm tours for elected officials and municipal staff to learn more about the local agri-food sector as well as stay up to date with changing agricultural practices and approaches. In Kawartha Lakes, for example, the municipality hosts an annual VIP Farm Tour for staff and council members. A respondent from Kawartha Lakes explained the event:

Last Friday we had another successful agricultural VIP tour day. We include Council, senior staff, any department staff that might deal with agriculture. And we include stops at a variety of farms and agri-businesses - this year we were focusing on sustainability, including cover cropping, tile drainage, and other conservation efforts. This year we also included candidates who are running in the municipal election. It's an initiative I support in partnership with the Agriculture Development Advisory Committee. (East, ST, Planner Interview)

The Township of Tay is another example of a municipality that hosts an annual farm tour for council and senior staff. A respondent from western Ontario explained the value of tours in their municipality, saying "the tours are pretty important, especially with staff that maybe don't have

a background in farming, so that they can see and understand that farming isn't just a combine going up and down a field” (West, ST, Planner Interview).

In addition to farm tours, several respondents discussed hosting joint meetings - involving upper- and lower-tier planners, neighbouring municipalities, and staff from multiple municipal departments dealing with agriculture. Respondents also discussed strategies to more regularly delegate to council on agricultural priorities and issues, and efforts to raise the profile of the sector. For example, a respondent from western Ontario explained their approach to orienting a new municipal council:

We tried to focus our orientation a bit more on agriculture the last time. For example, we had a little quiz on the importance of agriculture. We are trying to find more interactive ways to get council thinking at a high level about the importance of agriculture rather than a specific application they need to make a decision on. But there isn't a whole lot of opportunity to do that. One hour at the start of a council term is not really enough. (West, UT, Planner Interview)

5.4.6 Environmental stewardship

Environmental stewardship is the last category of initiatives that respondents discussed in the context of agri-food systems planning. Environmental stewardship initiatives aim to assist farmers in undertaking environmentally responsible practices and recognize the important role that agricultural operators play in the management of landscapes, the natural environment, and ecosystem health, as well as minimizing and mitigating impacts related to climate change and environmental degradation more broadly. Initiatives in this category include the Alternative Land Use Services (ALUS) program, rural clean water programs, tree planting initiatives, and agricultural plastic recycling programs, among others. Stewardship initiatives often involve a partnership between the municipality and an external organization, and provide financial support, technical assistance, and educational material to the agri-food sector related to a variety of environmental best management practices. Respondents indicated that municipal planning staff often play a coordination or supporting role in environmental stewardship initiatives.

Rural clean water programs are an excellent example of an environmental stewardship initiative that provides financial support and educational material to farmers adopting more sustainable practices. For example, the [Huron Clean Water Project](#) is a joint partnership between Huron County and the local conservation authorities and has supported over 4,000 farmer-led projects over the past 20 years, including tree planting, windbreaks, erosion control, cover crops, upgrading and decommissioning wells, and cattle fencing, among other things. Similar programs exist across Ontario, including the [Wellington County Rural Water Quality Program](#), [Oxford Clean Water Program](#), [Peel Rural Water Quality Program](#), [Dufferin Rural Water Quality Program](#), [County of Essex Rural and Agricultural Landowner Water Quality & Natural Areas Restoration Program](#), [City of Ottawa's Rural Clean Water Program](#), and the [North Bay Restore your Shore](#) initiative. While the majority of these programs rely on a partnership between the municipality and local conservation authority, the specific arrangements related to funding, communications, and program delivery varies by municipality. The Whitewater Region Community Improvement Plan (discussed in Section 5.4.3) provides another funding and program delivery model that municipalities can consider when looking to provide support for stewardship activities.

The Alternative Land Use Services (ALUS) is another example of a stewardship initiative that municipalities can support. For example, the Region of Peel recently launched the [ALUS Peel Pilot project](#) which aims to provide financial support to farmers undertaking nature-based solutions. These efforts focus on enhancing productivity, soil quality and water health. A respondent from Peel Region explained:

The ALUS Peel pilot project builds on our existing rural water quality program, which offers incentives to farmers to undertake projects. ALUS offers annual payments and supports future maintenance of those projects. ALUS programs raise their own funds and provide financial support for our administration of the program and for marketing and community engagement. There isn't any additional cost to the Region from this program, as it is entirely funded through ALUS. (Central, UT, Planner Interview)

The [Experimental Acres program](#) is yet another example of a municipal initiative to support more sustainable agricultural practices. The program, offered in Wellington, Grey, and Dufferin Counties, provides micro-grants to farmers for on-farm trials of regenerative agriculture and

was initially developed as part of the Guelph-Wellington Our Food Futures initiative funded by Infrastructure Canada.

In addition to stewardship programs, some respondents discussed broader climate change planning and policy work their municipality was undertaking. In most cases, climate change was a relatively new area of program and policy development for municipalities. For example, one respondent explained:

Climate change is the focus for our new official plan. It's going to have its own section, and also be intertwined with all the other sections - especially when it comes to the natural heritage system and the agricultural system. It will play a major role with respect to drafting policies, and the implementation tools for those policies. It will change how we approach the agricultural system, but it also goes in hand with the natural heritage system. (Central, UT, Planner Interview)

Another respondent from central Ontario reported:

We worked with the local conservation authority and the Ontario Climate Consortium on a vulnerability assessment for water infrastructure. We did a deep dive look at adaptation, risk, and vulnerability of crop agriculture in the municipality. We are trying to bring adaptation and agriculture forward in terms of understanding the problem and charting out solutions. It's an area that needs more work and collaboration across municipal boundaries. ... The Greater Golden Horseshoe Food and Farming Alliance has identified climate change as one of its top issue areas for the current strategic planning period. That's a significant resource that municipalities and other parts of Ontario wouldn't have. (Central, UT, Planner Interview)

There were also a handful of respondents who reported their municipality had made more substantial progress on climate change. Examples of municipalities that have published climate change plans include:

- [Kawartha Lakes' Healthy Environment Plan \(2022\)](#)
- [Growing Resilience - Durham Region Agriculture Sector Climate Adaptation Strategy \(2019\)](#)
- [City of Timmins Community Climate Change Adaptation Plan \(2022\)](#)
- [City of Kenora's Sustainability Action Plan \(2022\)](#)
- [Community Energy and Emissions Plan - A Plan for Climate Action in the Township of Billings \(2021\)](#)

To support their climate change work, several municipalities had hired climate change and/or environmental sustainability staff, including: the County of Haliburton, Grey County, Huron County, Wellington County, Chatham-Kent, City of Greater Sudbury, and Niagara Region. Some respondents also indicated that their municipality had environmental planners and foresters on staff who contribute to environmental land use initiatives, including natural heritage systems mapping and implementation.

Other agriculture, stewardship, and climate change-adjacent initiatives that respondents highlighted include:

- [Wellington County's Green Legacy Project](#) - a municipal tree planting initiative started in 2004 with the mission to strengthen the community's value of the natural environment and support green infrastructure;
- [Clarington's Trees for Rural Roads Program](#) which similarly supports tree planting and restoration efforts in rural communities; and
- Municipally supported agricultural plastics recycling programs such as the ones supported by the [Township of Chisholm](#) and [Oxford County](#).

5.5 Summary of Chapter 5

Chapter 5 addresses Research Question 3: *What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?* Specifically this chapter presents both survey and interview data highlighting the breadth and diversity of agri-food systems planning initiatives that municipal planning departments across Ontario support. Research results reveal that planning staff play a variety of roles and often work in partnership with other municipal departments, elected officials, and external organizations. Initiatives were grouped into six categories, including: land use planning policy, agricultural and food strategies, economic development initiatives, providing resources to the agri-food sector, training and education, and environmental stewardship. This chapter aims to showcase a range of ways that municipal planning departments support local and regional agri-food systems.

While it may not be practical, for each municipality in Ontario to pursue the full range of possible initiatives, municipal staff should endeavour to consider their options and implement those that best align with local needs and capacities. More specifically, municipal agri-food systems initiatives should be considered in the context of local and regional agri-food systems, including the agricultural land base and agri-food network, established networks and partnerships, relevant stakeholder groups, and available resources. Successful initiatives are locally responsive, reflective of community needs, and appropriately scaled to ensure long-term sustainability for the municipality.

Chapter 6: Best Practices and Resources

6.1 Purpose of Chapter 6

Chapter 6 is the last of three results chapters and addresses Research Question 4: *What best practices and resources would strengthen municipal agri-food systems planning capacity?* This chapter builds on the findings presented in Chapter 4, which identified factors that contribute to or hinder municipal agri-food systems planning capacity, and reports on the resources already being used to support this work, as well as ideas and suggestions for additional resources that would be helpful for both planning staff and municipal councils. This chapter is organized into three sections:

1. Resources and best practices being used by municipalities across Ontario (Section 6.2);
2. Municipal staff suggestions for what could help strengthen agri-food systems planning capacity (Section 6.3); and
3. Supports to help councils make informed decisions related to agriculture (Section 6.4).

The findings presented in this chapter draw on all three primary data collection methods, including the elected official survey questionnaire, planner survey questionnaire, and semi-structured interviews with planners.

6.2 Resources and best practices being used by municipalities across Ontario

One of the final questions that was asked as part of the interview process was “What best practices are currently employed to help planning departments respond to agricultural issues? How does the planning department stay up to date on agricultural and agri-food issues, priorities, and policies?”. Although some respondents focused their response on only one or two resources or best practices, the majority recognized the benefits of using multiple and diverse strategies to support and respond to the agri-food sector. In this context, respondents discussed different approaches used by municipal staff to support municipal agri-food systems planning.

For the purpose of this chapter resources and best practices identified by respondents are organized into four overarching categories:

1. Professional networks;
2. Provincial resources;
3. Relationship building with the local agri-food sector; and
4. Continuous learning.

These categories were identified to help organize and structure this chapter but are not mutually exclusive. Furthermore, the resources and best practices discussed are in no particular order as there is no clear evidence that certain approaches were more effective than others.

6.2.1 Professional networks

Professional networks were commonly identified by respondents as an important resource for sharing best practices and seeking input from other municipal planners regarding how similar agri-food systems planning issues were being dealt with in other municipalities. One respondent from northern Ontario reflected: “It’s important to have good contacts and the ability to call somebody that you know, who is capable of helping you” (North, ST, Planner Interview).

This sentiment was echoed by many respondents who shared that reaching out to professional contacts was their first course of action when an agricultural issue arose that was new or unfamiliar. Respondents discussed reaching out to neighbouring municipalities, municipalities with similar characteristics, associated upper-tier or lower-tier planning staff, previous workplaces and colleagues, classmates and friends from planning school, as well as professional planning circles (e.g., OPPI Planners Connect).

For example, a respondent from northern Ontario reflected on the importance of reaching out to municipalities in the same area of the province or municipalities that have similar characteristics:

The first place I would look is at what my colleagues are doing in the four other large urban municipalities in northern Ontario. If they’re doing something, I would always

contact them. And then if they aren't doing something, then I would look at municipalities that are about the same population size. (North, ST, Planner Interview)

A respondent from eastern Ontario shared a similar perspective, saying, "I like to look at other municipalities that are the same size as us and I also look at our neighbours so that we have some consistency within our communities" (East, ST, Planner Interview). While the majority of respondents identified relationship building with neighbouring municipalities or municipalities with similar characteristics (most often population size), some respondents discussed looking at other areas of the province that might have more experience with agri-food systems planning. For example, one planner from eastern Ontario explained:

A lot of the issues start off in southwestern Ontario, and then they kind of trickle this way. So it's always good to have a heads up and share information, because really, a lot of the issues that we have are issues other municipalities are facing as well. (East, UT, Planner Interview)

Another respondent from eastern Ontario explained: "When we were working on our local cannabis policies we reached out to planners in Norfolk and Brant in southern Ontario, where they already had quite a few operations, and so their perspective was super helpful" (East, UT, Planner Interview). In addition to building one-on-one relationships with other municipalities, some respondents shared that they had developed a regional network of contacts with neighbouring municipalities. A respondent from western Ontario explained:

We've learned a lot over the years from the Huron County planners - we look to them to compare notes on agricultural and rural issues. Over the years they have been a wealth of information - similar to Bruce, Simcoe, and Wellington. You know, we're all kind of in it together. So it's great that we're able to share resources. (West, UT, Planner Interview)

A similar network was discussed by respondents from eastern Ontario:

There's an Eastern Ontario planners meeting that we hold every three or four months and we can bring up key issues or questions there. We can also email each other anytime. ... The meetings are not run through any formal organization. It's really driven

by the planners in the area who realized that we benefit from talking. (East, UT, Planner Interview)

Respondents also discussed the County Planning Directors group in southern Ontario and the Northern Planning Directors group as important networks for sharing experiences, brainstorming solutions, and coordinating efforts across municipal boundaries. A respondent from western Ontario reflected on the value of the County Planning Directors group in providing insights and advice from across the province:

We would be more likely to send an email to the County Planning Directors group than to contact provincial staff. There is a County Directors group and if you have a question you can send it out to the group and get a bit of a scan across the province on a particular issue. (West, UT, Planner Interview)

A similar sentiment was shared by a respondent from eastern Ontario:

The [County Planning Director] email list includes about 50 planners from counties and single-tier rural municipalities. So that's pretty helpful. Anytime you have a problem or something new, you can put it out to the group, and there are 50 people with different experiences, and who may have dealt with the same thing. (East, UT, Planner Interview)

The Northern Planning Director group is a smaller group that offers a similar model for the five larger urban municipalities in northern Ontario. A respondent explained:

If there's something that I've never run across, there is a network here in northern Ontario which includes the five major urban municipalities. The group is loosely based on the regional planning commissioners of Ontario model. So we meet quarterly to discuss planning issues. And it's the managers or the directors of the planning departments. If there's something agriculturally related, one of us could bring it forward and see what the other municipalities are doing... It's a good group to bounce ideas off of. (North, ST, Planner Interview)

In addition to region-specific networks, some respondents discussed professional organizations as helping to facilitate the sharing of experiences and best practices. Professional organizations

identified by respondents include the Ontario Professional Planners Institute (OPPI), Ontario Association of Committee of Adjustments (OACA), Regional Planning Commissioners of Ontario (RPCO), Long Range Planners of Ontario (LORAPON), Development Directors of Ontario (DDO), and the Ontario Zoning Official Network. A respondent from central Ontario explained:

We can leverage the advantages of being members of the Regional Planning Commissioners of Ontario, Long Range Planners of Ontario, and Development Directors of Ontario, and can reach out to others who are members of those organizations to ask them if they have experience with the issues we are facing and if they do, how they are responding. (Central, ST, Planner Interview)

There were also a handful of respondents who discussed reaching out to planning consultants or municipal staff in other departments when looking to gain insights regarding agri-food systems planning issues. One respondent from western Ontario shared:

We don't rely too much on other resources beyond the staff that exist within our Planning and Economic Development department. We rely on economic development staff to be our ears and the boots on the ground at the community level. They provide a lot of insights into the motivations, the barriers, and the opportunities that various people are facing, when it comes to establishing and potentially expanding their agricultural operations and value-added industries. (West, ST, Planner Interview)

Section 4.5.2 of Chapter 4 provides additional discussion regarding the importance of relationships with other municipalities as well as external organizations, in contributing to agri-food systems planning capacity.

6.2.2 Provincial resources

Resources provided by the Province were also frequently identified by respondents as contributing to municipal agri-food system planning efforts. While a small handful of respondents mentioned MMAH as a resource in this area, the majority discussed the role of OMAFA guidelines, training, and agricultural land use planning staff in helping municipal staff interpret and implement agricultural policies. OMAFA guidelines discussed by respondents (in order of frequency mentioned) include:

- Publication 851: Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas;
- Publication 853: The Minimum Distance Separation (MDS) Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks;
- The Draft Agricultural Impact Assessment (AIA) Guidance Document; and
- Publication 856: Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe.

Respondents explained that OMAFA guidelines were not only helpful for their own understanding of agricultural land use policies, but that the graphics and plain language summaries were useful tools to help elected officials and the public understand as well. For example, one planner from eastern Ontario explained:

I find the new OMAFRA guidelines are better than the one before. The new guidelines have more figures and illustrations, and it's easier to explain to someone - to show them what's the intent of the policy with images. So it helps to explain. (East, UT, Planner Interview)

In addition to formal OMAFA guidelines, respondents also spoke about attending training opportunities provided by OMAFA (such as MDS training and agricultural systems implementation). A respondent from western Ontario reflected:

Sometimes OMAFRA will put on training courses. So for example, we've all done the MDS training twice. It's a huge priority from a management perspective - that planning staff are up-to-date and keeping relevant. It's important in terms of information sharing with politicians - you want to be giving them the most up to date information. So I think that that's a huge thing for planners to be on top of. (West, UT, Planner Interview)

A few respondents also spoke about OMAFA web tools, including AgriSuite (to support MDS calculations), and custom data and mapping tools including the Agricultural Systems Portal and AgMaps as being important resources for municipal staff. In addition to OMAFA publications, training, and tools, several respondents spoke about OMAFA land use planning staff as being an important resource to better understand provincial policies, staying up to date regarding

agricultural issues and trends, and gaining insight regarding what's happening in other parts of the province. For example, a respondent from western Ontario explained:

We have a really good relationship with OMAFRA. They are a primary - may not be our first - but a primary point of contact for us on land use planning matters related to agriculture. We had a couple MDS issues recently where we needed their advice and so we reached out. Or when we were working on the Official Plan and the AIA associated with the settlement area boundary expansions - we looked to OMAFRA for their advice and guidance. (Central, UT, Planner Interview)

Beyond OMAFA land use planning staff, several respondents also spoke about relationships they had with the OMAFA rural economic development unit. A respondent from central Ontario explained:

We have a very good working relationship with our OMAFRA Economic Development advisor. She sits on the Golden Horseshoe Food and Farm Alliance working group, and so she's a good person to go to if I need additional information or if I'm looking for other case studies in the province - that sort of thing. (Central, UT, Planner Interview)

Section 4.5.3.4 of Chapter 4 provides a more detailed discussion regarding the role of the Province related to municipal agri-food systems planning capacity.

6.2.3 Relationship building with the local agri-food sector

Relationship building with the local agri-food sector is another best practice identified by respondents. More specifically, respondents discussed field visits, establishing an agricultural advisory committee, and consulting with agri-food systems organizations (e.g., farm organizations, commodity groups, local food policy group) as contributing to more effective agri-food systems planning. In this context, respondents emphasized the importance of gaining first-hand experience and knowledge of the local agri-food sector, ensuring agri-food systems considerations were included in municipal land use planning, and helping the agri-food sector better understand and navigate land use planning policies and processes.

Several respondents emphasized the importance of completing site visits and consulting with impacted agri-food systems stakeholders as part of the planning process. One respondent from western Ontario reported that in their municipality planners were required to complete an in-person site visit prior to bringing a report to council (West, ST, Planner Interview). Respondents also talked about the value of farm visits/tours in helping planners better understand the agri-food sector. A respondent from central Ontario discussed the value of organizing farm tours:

We had a farm forum here where we got all planners and economic development staff together to chat about shared issues and ask questions. I think that that sort of information sharing between farmers and municipal planners, economic development folks and councillors, it's a great opportunity just to talk through those issues and get some better understanding. (Central, UT, Planner Interview)

Along this same vein, respondents from municipalities with established agricultural advisory committees often acknowledged the value of bringing new issues or challenges to the committee for feedback and discussion. Respondents also identified a number of other agri-food organizations that were important resources regarding agri-food systems planning information, including the Ontario Federation of Agriculture (and associated county federations), [local food policy groups](#) (including councils, roundtables, networks, etc.), the Ontario Farmland Trust (OFT), the Golden Horseshoe Food and Farm Alliance (GHFFA), the Greenbelt Foundation, the Northern Ontario Farm Innovation Alliance (NOFIA), North Dufferin Agricultural and Community Taskforce (NDACT), and the Rural Agri-innovation Network (RAIN). The Ontario Federation of Agriculture is the largest of three accredited farm organizations in Ontario and provides resources to municipalities regarding the agri-food sector, including agri-food systems planning. A respondent from central Ontario discussed the value OFA provides in terms of sector-specific advice:

I was remiss in mentioning OFA. They're a fantastic resource as well. We go to our member services representative quite often to get industry-based insights from him and sort of from a policy perspective, or lobby perspective, what are the priorities we should be aware of? (Central, UT, Planner Interview)

Respondents also identified the Golden Horseshoe Food and Farm Alliance (GHFFA) as a key resource related to municipal agri-food systems planning. For context, GHFFA is a partnership that includes upper-tier municipalities and Federations of Agriculture in Niagara, Peel, Halton, York, and Durham with the aim of coordinating a more integrated approach to food and farming in the Golden Horseshoe area. A respondent from central Ontario shared:

We use the GHFFA to bounce ideas off each other and understand what other municipalities have tried. It is nice to talk with other similar municipalities in the region that are somewhat similar to us, to hear what they're doing and think about what we can work on together. (Central, UT, Planner Interview)

Section 4.5.2.4 of Chapter 4 provides more discussion regarding the relationships between agricultural and food systems stakeholders and municipal planning staff in relation to municipal agri-food systems planning.

6.2.4 Continuous learning

Continuous learning is the last category of best practices and resources that respondents identified, and includes a number of different activities focused on more formal training, webinars, and workshop events related to agri-food systems planning. Key events mentioned by respondents include the Ontario Farmland Trust's Farmland Forum, OFA's Agriculture Economic Development and Planning Community of Practice, and industry conferences (e.g., OPPI, CIP, EDCO, OACA), as well as MMAH and OMAFA training sessions and workshops. A respondent explained their view on webinars and information sessions:

We certainly attend webinars and anything that comes up in terms of information sessions, whether it's hosted by OMAFRA, or through OPPI, or another organization. As a manager, I will circulate the opportunity to make sure everybody's aware of it, and encourage as many staff as possible to attend and increase their knowledge. Because at some level, everyone in the planning department deals with agricultural issues relatively frequently. (West, UT, Planner Interview)

Several respondents specifically mentioned OFA's Agriculture Economic Development and Planning Community of Practice (the Community of Practice), in partnership with the Ontario

Ministry of Rural Affairs (MRA) as an important resource for staying up to date on issues impacting the agri-food sector as well as relevant municipal policies and programs. The Community of Practice offers quarterly webinar sessions on topics relevant to municipal policies, procedures and programming impacting the agri-food sector. A respondent from central Ontario explained:

The OFA and OMAFRA community of practice addresses different agricultural issues, sometimes they are land use related, sometimes they're not. But they're all about agriculture, food, and supporting the system. The sessions and topics have been excellent. I think whenever you share ideas and what people are doing, we learn from each other and we collectively raise the bar. (Central, UT, Planner Interview)

In addition to quarterly meetings, the Community of Practice also hosts an annual Municipal Agriculture Economic Development and Planning Forum, which was mentioned by several respondents as a key event to attend related to agri-food systems planning. The Ontario Association of Committee of Adjustments Conference was also mentioned as an event that includes agri-food systems planning related sessions. A respondent from northern Ontario explained:

I generally attend the Ontario Association of Committee of Adjustments Conference once a year. And there's usually one or two sessions that speak to agricultural viability and trends in other municipalities and other planning board areas. (North, ST, Planner Interview)

In addition to attending training sessions and workshops, respondents also mentioned signing up for email newsletters (e.g., Ontario Farmland Trust, Food Communities Network, Greenbelt Foundation) and monitoring government websites (e.g., Environmental Registry of Ontario) as an important way to stay up to date on trends and issues, publications and research, and provincial policy changes relevant to the agri-food sector.

6.3 Municipal staff suggestions for what could help

Through the interview process, respondents were also asked to reflect on what resources could help the planning department respond to agricultural and rural issues. For the purpose of this chapter, respondents' suggestions have been organized into six action areas:

1. Training and education;
2. Guidance documents and newsletters;
3. Sharing of best practices;
4. Agri-food systems planning leadership;
5. Relationship building; and
6. Funding and staff resources.

6.3.1 Training and education

Training and education opportunities related to agri-food systems planning were the most frequently identified resource that would help planning departments respond to agricultural and rural issues. More than half of the respondents who participated in an interview expressed interest in additional learning opportunities, including: more frequent agri-food systems planning training (e.g., OMAFA MDS training, an introduction to agri-food systems planning in Ontario), additional learning opportunities related to emerging agri-food systems topics (including farm tours), training and resources for non-planners working in planning roles, and the inclusion of agri-food systems planning topics as part of the curriculum for accredited planning schools.

When asked their preference for synchronous or asynchronous learning opportunities, many respondents indicated that both types of learning would be beneficial, and those that had a preference were evenly split. There was also relatively equal interest for in-person and virtual training opportunities. Several respondents noted that in an ideal world there would be on-demand training available so that planners could complete content at their own pace and revisit materials as needed, as well as more regular live training opportunities that allow participants to ask questions, benefit from peer-to-peer learning, and gain a deeper

understanding of agri-food systems planning topics. A few respondents also indicated that French training and learning opportunities would be helpful.

In terms of topics for training and learning opportunities, the majority of respondents indicated that they would benefit from general training regarding a range of agri-food systems planning issues and topics (e.g., MDS, surplus farm dwelling severances, agricultural systems approach), as well as learning about the agri-food sector more broadly. Several respondents also expressed a desire to better understand emerging trends in agriculture, including: controlled-environment agriculture (e.g., vertical agriculture and greenhouses), small-lot agriculture (e.g., market garden operations), new entrants into agriculture and land access, and urban agriculture (e.g., backyard chickens, rooftop gardens). For example a respondent from central Ontario commented:

One thing that we may see more of in the future is smaller farms that sell vegetables directly to customers via delivery services or farmers markets. I think staff would benefit from getting more education on the emerging trends in horticulture and agriculture to ensure that our policy can be adaptive to these farming practices. (Central, ST, Planner Survey)

A respondent from northern Ontario shared a similar interest in learning more about emerging agricultural practices:

For me, it's trying to capture sort of the other modes of food production and food processing that have come online over the last few years, as opposed to the more traditional types of agricultural production. Things are changing. Just like agri-tourism was a few years ago - people were setting up their operations and municipalities were like deer in headlights - what do we do with this? ... And now that's kind of come and gone and there is a lot more acceptance of those types of supplementary incomes for farms. But now we need a broader understanding of the spectrum of agriculture. We aren't a big agricultural area. But there are still plenty of opportunities for food production and food processing. (North, ST, Planner Interview)

6.3.2 Guidance documents and newsletters

In addition to training and educational opportunities, respondents expressed interest in additional guidance materials as well as updated versions of existing guidance documents. A few participants also expressed interest in an agri-food systems planning newsletter or e-blast (potentially coordinated by the University of Guelph, OMAFA, or OPPI). Plain language summaries of key agricultural policies to assist planning staff in explaining agricultural policies to the public and elected officials were another idea shared by respondents. Similar to the request for French training and learning opportunities, the same respondents suggested more guidance materials in French would be helpful.

Existing guidance materials that were identified by respondents as needing an update include: the Guidelines on Permitted Uses, the Minimum Distance Separation (MDS) Document, and the Draft Agricultural Impact Assessment (AIA) Guidance document. Specific to permitted uses, respondents suggested additional information and guidance related to wedding venues, special events, and cumulative impacts would be helpful. In the context of MDS, respondents were looking for information about decommissioning livestock barns, guidelines for livestock in urban areas, additional consideration for hobby farms, different MDS guidelines for near-urban versus rural application, and setback guidelines for other odour generating agricultural activities (e.g., cannabis).

Several respondents also expressed interest in new guidance documents on a range of topics, including: lot creation in rural and prime agricultural areas, specialty crop areas, urban agriculture, agricultural production on rural lands, and agriculture in northern Ontario. A respondent from western Ontario explained:

One of the other things that I think we would benefit from is more guidance or information on specialty crop lands. OMAFRA established their LEAR study approach for identifying prime agricultural lands, but they've never been very clear that that doesn't cover specialty crop areas. And in the past, OMAFRA reached out to us on two different occasions saying 'Hey, we might be developing some criteria for specialty crop lands'. ... We know that our climate is changing and we know that our mapping might have to

change accordingly. But we're not highly empowered to make those changes. (West, UT, Planner Interview)

Another topic that was mentioned by a number of respondents was clearer guidance around agricultural production on land outside of the prime agricultural area, including rural lands and settlement areas. A respondent from northern Ontario explained:

We would really benefit from materials that speak to food production in non-prime agricultural areas or on land with poorer soil quality. When we think about food security, or local food production, I think that would be very useful for northern Ontario communities. You know, as land is eaten up in southern Ontario, maybe there's more of a reliance on northern Ontario lands, and it would be helpful to have some guidance on agricultural uses in non-prime agricultural areas. (North, ST, Planner Interview)

The last area of guidance that several respondents spoke to was the need to better understand agricultural lot sizes and their implications for land access and succession planning. In this context, respondents (primarily from western Ontario) recognized a continued, if not growing, interest in smaller agricultural lots as being more accessible for new agricultural operators. Respondents also indicated that it would be helpful to have tools to better assess the viability of smaller agricultural operations. For example, one respondent explained:

It would be really amazing if consultants could help applicants demonstrate the viability of a farm business on an undersized agricultural lot. It would be helpful if there was some standardization about how to demonstrate that without doing a full business plan. ... There are viable farm businesses that are smaller, and we don't have any support systems for them in the planning world. (West, UT, Planner Interview)

6.3.3 Sharing of best practices

More regular sharing of best practices related to agri-food systems planning was another suggestion several respondents spoke to. In this context, respondents suggested that OMAFA, OFA, and OPPI could help coordinate information sharing through networking events, newsletters, and the creation of a portal of resources for agri-food systems planning. One respondent from eastern Ontario reflected: "...it would be really helpful if we could phone up

the Province and have a discussion about it - Are there similar instances elsewhere in the province that you're aware of?" (East, UT, Planner Interview). A similar sentiment was shared by a number of respondents who were looking to better understand and learn from different approaches being taken by municipalities across the province. A respondent from western Ontario reflected:

It feels like each municipality is trying to figure some of these things out for themselves, and there's not always a coordinated, strong position from the Province on helping municipalities with issues. ... I guess we don't necessarily want the Province telling us exactly what to do, but it would be nice if they could recommend best practices or more guidelines - like the on-farm diversified uses guide. That is more helpful than just putting out one policy that says 'municipalities across the province shall do this'. Sometimes you're thinking - other places must have already dealt with this or there must be a best practices guide but when you call the Province [...]. (West, UT, Planner Interview)

Beyond looking to OMAFA to help fill this gap, several respondents suggested professional organizations could help to organize the sharing of information between municipalities. A respondent from northern Ontario explained:

I feel like there's so much information out there, and everybody's working on so many innovative things. But we never get to hear about what other municipalities are doing. It would be really nice. And I'm not just talking about agricultural stuff at this point, I'm talking about everything. Like it would be really nice if OPPI or something could gather that information together and just throw it out to the membership. That would be super helpful and would add a lot of things to my to-do list. But we just all seem to be doing some really innovative stuff and you just never hear about it. (North, ST, Planner Interview)

One respondent even suggested a learning exchange between northern and southern municipalities as a way to share approaches and best practices from across the province and build capacity related to agri-food systems planning (North, ST, Planner Interview).

6.3.4 Agri-food systems planning leadership

The need for stronger leadership related to agri-food systems planning and farmland protection in Ontario was also identified by respondents. In this context, respondents most often discussed looking to OMAFA staff, as well as OPPI, for more learning opportunities and resources related to agri-food systems and rural planning topics. Some respondents also discussed the benefit of having a one-stop-shop for agri-food systems planning resources. Several respondents explained that there were a number of groups (e.g., OMAFA, OPPI, GHFFA, OFT, UoG) working on and producing resources related to agri-food systems planning topics and that more coordination of these resources was needed. For example, a respondent from northern Ontario commented:

Maybe there is an OMAFRA mailing list or something I'm just not part of, but it would be helpful to have some type of centralized area for information where you could look up specific topics. Maybe it does exist, and I just haven't found it yet. (North, ST, Planner Interview)

A planner from central Ontario suggested “an online portal and associated newsletter for all things agri-food systems planning related” (Central, UT, Planner Interview). A “rural planning handbook” was another suggestion which would facilitate the compilation of agri-food systems planning information in one spot (East, UT, Planner Interview).

Another area where respondents suggested additional leadership would be helpful was in relation to communicating the importance of the agri-food sector (both to elected officials and the general public). One specific idea that was suggested was the creation of regional summaries and standardized infographics that municipalities could update and modify to address their specific communication needs (North, ST, Planner Interview).

6.3.5 Relationship building

Respondents also discussed the benefit of strengthening relationships to support agri-food systems planning efforts. Specific organizations and groups that were mentioned by respondents (in order of frequency) include OMAFA, agri-food systems stakeholders (e.g., county federations of agriculture, commodity groups), economic development staff, and academic and research institutions. Specific to OMAFA, respondents suggested stronger

relationships with the agricultural land use planning staff, as well as crop specialists, economic development advisors, and environmental stewardship staff. For example, one respondent from central Ontario reflected:

OMAFRA has a number of specialists and unless you've worked directly with them, it's hard to know what's happening on those fronts. For example, with soils or with value-added products, or there are specialists in dairy, you know, we've got a sheep dairy. So finding out a little bit more on the specialist side and the work that they're doing would be really great. (Central, UT, Planner Interview)

Academic and research institutions were also identified by respondents as important organizations to leverage in undertaking agri-food systems planning work. Several respondents mentioned participating in research and learning opportunities provided by the University of Guelph's Rural Planning and Development program, as well as research supported by institutions like RAIN, GHFFA, and the Greenbelt Foundation. One respondent commented:

I see a lot of opportunities for building stronger relationships with the University of Guelph. But much like the municipal government, or any level of government, appears to be a black box of question marks to the regular resident, the University of Guelph appears to be a black box of 'I don't even know who to ask or who to talk to'. ... But I see a lot of potential there in terms of the different programs the University offers. It would be cool if the University of Guelph and [municipality name] were able to work together to leverage the benefits of academia for both of our organizations. (West, ST, Planner Interview)

6.3.6 Funding and staff resources

The last group of suggestions raised by respondents includes those related to providing funding and staff resources. In this context, respondents discussed limited financial resources as constraining their ability to carry out municipal agri-food systems planning work. For example, one respondent from northern Ontario explained:

We are so bloody overwhelmed with stuff to do all the time. As a tiny little micro, single-tier municipality, we just don't have capacity to handle anything more. We don't

have the capacity to handle what is mandated of us now. ... It sounds like I'm complaining in a sense, but it's also just simply the truth. Our human resource capacity, never mind our financial resources, does not in any way, shape or form come close to meeting what is demanded of us. ... And so, you know, somebody could walk in tomorrow with a well-founded inquiry about agriculture and no matter what I knew, and what my interest level was, I couldn't respond adequately. (North, ST, Planner Interview)

Another respondent from northern Ontario commented:

It does come down to money. Because I can't afford to hire a full-time planner who has the same vision. I've even tried to look at sharing a planner because some of the bigger municipalities around us do have a planner and they have some capacity. But again, the visions for their home municipality differ from our municipality. I don't know what the solution is. ... Even if I'm able to hire a quarter-time or half-time planner, I'm not going to be able to get them to move to [municipality name] to work half the time. It's just not reasonable. (North, ST, Planner Interview)

Respondents from southern Ontario also discussed the need for more staff and financial resources. For example, a respondent from central Ontario explained:

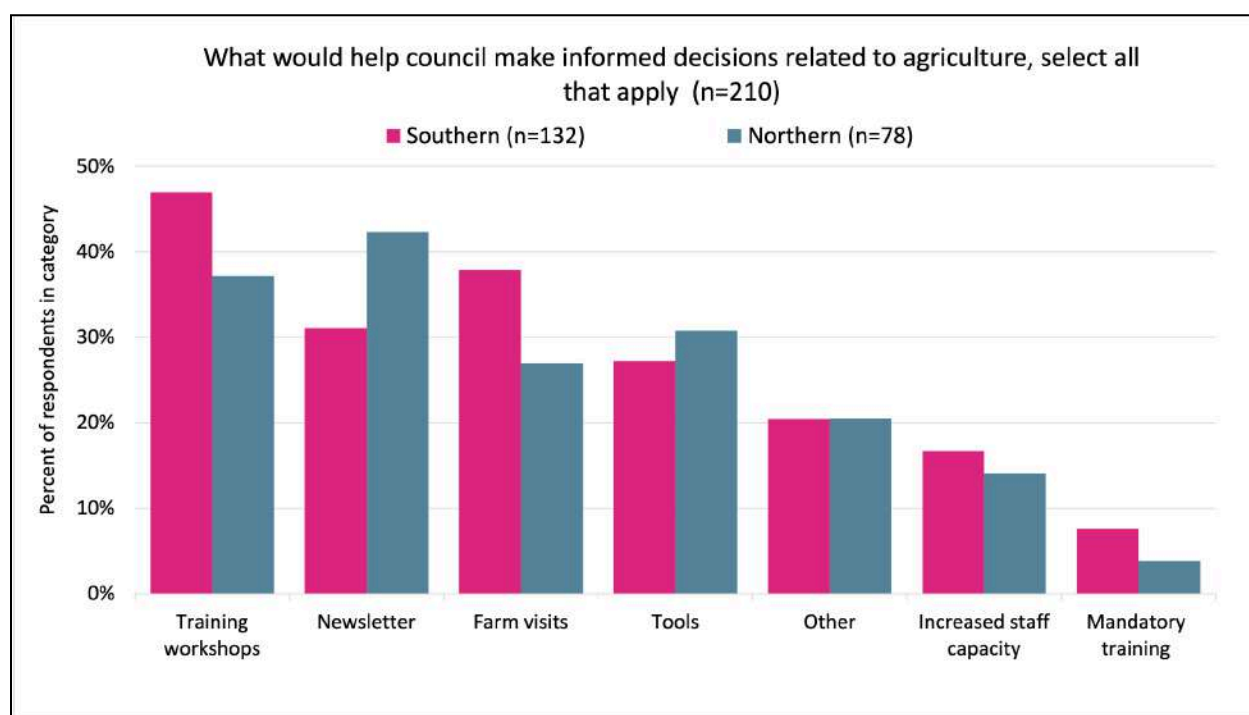
An extra person on our team would be helpful. ... For example, I don't have any planners that are able to go to the OLT if something comes up. So definitely, from a team perspective, we would really do well to have an intermediate planner on hand. (Central, UT, Planner Interview)

In addition to funding for staff resources, several respondents mentioned that it would be helpful to have funding available for specific types of initiatives, such as creating a municipal agri-food strategy or identifying specialty crop areas. Section 4.5.1.5 of Chapter 4 includes additional discussion regarding staff shortages and challenges in hiring planning staff.

6.4 Supports to help council make informed decisions

As part of the survey, elected officials were also asked about what resources would help their council make more informed decisions related to agriculture. This question provided a number of default options, including: training workshops, newsletters, farm visits, tools, increased staff capacity, and mandatory training. Figure 6.1 depicts respondents' preference for different resources based on the options provided in the survey. It is interesting to note that respondents from southern and northern Ontario had slightly different preferences. Respondents from northern Ontario indicated that a newsletter would be the most preferred resource to support council decision making, followed by training workshops, tools, and farm visits. Respondents from southern Ontario indicated a preference for training workshops and farm visits, followed by newsletters and other tools.

Figure 6.1 - What would help council make informed decisions related to agriculture



Respondents were also provided the opportunity to suggest other resources and ideas that would help their council make more informed decisions related to agriculture. Several respondents indicated that more information about the agricultural sector and training for

councillors with limited knowledge of agriculture would be beneficial. For example, a respondent from western Ontario commented:

We do not have a strong BIG picture guiding us. We mostly agree that we want to stay as a strong agricultural community, but my feeling is this is not strategically outlined, and is being done somewhat blindly. (Central, LT, Elected Official Survey)

Some respondents also indicated that more training related to planning processes, policies, and tools would help elected officials understand the rationale behind planning policies as well as the options available.

There were also a number of respondents who identified that building relationships with partner organizations would help council make informed decisions related to agri-food systems planning. For example, a respondent from eastern Ontario commented: “Cooperation, education, and mutual committees would benefit both the sector and council, and the public” (East, LT, Elected Official Survey). Specific organizations identified by respondents include: county federations of agriculture, agricultural advisory committees, OMAFA, and neighbouring municipalities. There were also a few respondents who commented that they would like to see an agricultural advisory committee established in their municipality.

Stronger farmland protection policies were also mentioned by elected officials as something that would help council make informed decisions related to agriculture. In this context, several respondents noted that municipal councils would benefit from more support in navigating competing priorities on a limited land base. Specifically, respondents were looking for more strict requirements for settlement boundary expansions and density targets, as well as extended protections for agriculture on rural lands. For example, a respondent from western Ontario explained:

The current [planning] system only considers Class 1 to 3 as prime farmland worth protecting and this is based on a property's ability to grow and harvest the three main cash crops. Since so many acres of Class 1 to Class 3 lands have already been lost and Class 4 lands can produce excellent yields of forage or serve as pasture, Class 4 lands should be considered as Prime and Class 5 should be added to buffer the Class 4 lands.

... The reality is that the production of many of the fresh meats and vegetables that people see in a grocery store rely on very productive class 4 lands. (West, LT, Elected Official Survey)

Respondents were also concerned about the future of the agri-food sector and emphasized the need for resources to support the next generation of farmers including educating youth about agriculture and providing financial support to new farmers. One respondent from northern Ontario explained:

Unless we can encourage the younger generation or immigrants to take up farming through grants or subsidies to start them into viable operations, I think there will be very limited growth in our area from what you see right now, or this may even get smaller as present farmers reach retirement age. (North, ST, Elected Official Survey)

In this context, respondents indicated that additional funding was also needed to address existing gaps in the agri-food network, including infrastructure, cold storage, abattoirs, commercial kitchens, and meat processing.

Respondents identified several other areas where funding would be helpful to support agri-food systems planning. For example, one respondent suggested that “no cost/low cost access to expertise” would help municipal councils retain qualified agricultural planning experts (West, LT, Elected Official Survey). Another respondent suggested that funds be made available for municipalities “to create and maintain reports that capture who in the municipality is farming, what type of farming, and what crops or animal husbandry are practiced” (East, ST, Elected Official Survey). However, the most frequently reported challenge by elected officials related to funding was that reduced property taxes collected for agricultural land disincentivized municipal councils from designating and protecting their agricultural land base. A respondent from eastern Ontario explained:

We are a rural municipality and therefore do not have the tax base that other municipalities may have. We protect our land to ensure our capacity to feed people but the Province does not recognize the financial strain this puts on a rural municipality. (East, LT, Elected Official Survey)

Another respondent shared a similar sentiment:

The reduced tax rate of farm/agricultural lands puts financial pressure on municipal finances and is no longer supported or adjusted by higher levels of government. This puts the municipalities' support for agriculture or maintaining lands as agricultural in direct opposition with the financial well-being of their community. (East, UT, Elected Official Survey)

In this context, several respondents suggested that funding be provided to municipalities to help offset lost revenues and encourage the protection of agricultural land.

6.5 Summary of Chapter 6

Chapter 6 addressed Research Question 4: *What best practices and resources would strengthen municipal agri-food systems planning capacity?* This chapter reported on the resources already being used to support agri-food systems planning work, as well as ideas and suggestions about additional resources that would be helpful for both planning staff and municipal councils.

Resources and best practices being used by municipal planning departments were organized into four overarching categories:

1. Professional networks;
2. Provincial resources;
3. Relationship building with the local agri-food sector; and
4. Continuous learning.

In terms of additional resources that would be helpful, the most frequent suggestion from both planners and elected officials was additional training and materials related to the agri-food sector and agri-food systems planning implementation. Guidance documents, newsletters, relationship building, and the sharing of best practices were other suggestions shared by both respondent groups. Respondents also identified a number of different ways additional funding could benefit both the agri-food sector as well as municipalities in undertaking agri-food systems planning work.

Chapter 7: Discussion and Next Steps

7.1 Purpose of Chapter 7

The purpose of Chapter 7 is to discuss the implications of this research for both planning practice as well as academic discourse related to agri-food systems planning. In Ontario, municipal governments play an important role in supporting and responding to agri-food systems and this research provides a better understanding of their capacity to undertake this work. This research looked to address five objectives, including:

1. Develop a conceptual framework for municipal agri-food systems planning capacity in Ontario.
2. Investigate the capacity of municipal planning departments to respond to and support agri-food systems in Ontario.
3. Evaluate the capacity of municipalities to implement Ontario's agri-food systems land use policies (including Minimum Distance Separation (MDS), agricultural impact assessments, agricultural systems approach, and the Farming and Food Production Protection Act).
4. Explore how municipal agri-food systems planning capacity is supporting local and regional agri-food systems actors, interactions, and functions.
5. Identify strategies to strengthen municipal agri-food systems planning capacity in Ontario.

This is the last chapter of this report and builds on all previous chapters. More specifically, Chapter 7 includes a summary of research findings, a modified conceptual framework for municipal agri-food systems planning capacity, lessons learned for planning practice, and areas for future research.

7.2 Summary of research findings

This research looked to investigate municipal agri-food systems planning capacity across Ontario and is premised on the idea that “a thriving agricultural industry depends on the knowledge and support provided by municipal governments” (Caldwell et al., 2021a, p. 7). Through land use planning, economic development, environmental stewardship, and broader decision making, municipal staff and elected officials have the ability to encourage or hinder agri-food systems in their communities. While there is established interest in and research related to agri-food systems, food systems, and agricultural planning, there is limited understanding about what capacities are needed to undertake this work (Caldwell et al., 2021a; Caldwell et al., 2021b, Zink et al., 2022). This research looks to address this gap and is guided by four research questions:

1. How can municipal agri-food systems planning capacity be conceptualized?
2. Are municipal planning departments well positioned to respond to and support agri-food systems in Ontario?
 - 2.1. What factors (e.g., staffing, expertise, community relations) contribute to and/or hinder municipal capacity?
 - 2.2. Are municipal planning departments well positioned to implement Ontario's agri-food systems land use policies?
 - 2.3. How does municipal agri-food systems planning capacity vary across the province?
3. What activities are municipal planning departments in Ontario undertaking in support of local and regional agri-food systems?
4. What best practices and resources would strengthen municipal agri-food systems planning capacity?

A variety of methods were used to address the research questions and objectives in a holistic and pragmatic manner, including (1) a literature review of agri-food systems planning and capacity (as it relates to municipal planning); (2) primary data collection including both survey questionnaires and semi-structured interview data (with municipal planning staff and elected

officials), as well as the identification of secondary data sources; and (3) data analysis, including thematic analysis, data visualization, and statistical analysis.

Primary data collection efforts for this project resulted in 196 planner surveys, 230 elected official surveys, and 68 interview transcripts. In total, 290 of 444 municipalities in Ontario participated in this research through at least one of the data collection methods. Upper-tier municipalities had the highest participation rate (90%), followed by single-tier southern municipalities (83%), single-tier northern municipalities (70%), and lower-tier municipalities (57%). Participation rates across all four MMAH Municipal Service Office regions were similar.

Findings from this research provides insight regarding how agri-food systems are perceived, valued, and interacted with by municipal planning staff and elected officials, in addition to discussing contemporary agri-food systems planning issues and challenges facing Ontario municipalities. Key issues identified include the continued pressures on the agricultural land base, ongoing challenges related to agriculture in the rural area, changing nature of agriculture, land use planning framework in Ontario, larger food systems challenges, and a growing knowledge gap.

This research also identified a number of factors which contribute to municipal agri-food systems planning capacity, including: staff and council knowledge of agri-food systems, planning service delivery, collaboration between planning and other municipal departments, relationships with external actors (including other municipalities and agri-food systems stakeholders), municipal council's priorities and approach to decision making, and individual or organizational beliefs and convictions. These factors are grouped into four overarching themes: planning department structure and personnel; relationships with other municipal departments and external actors; the land use planning framework in Ontario; and commitment to local and regional agri-food systems.

This research confirms that municipal capacity to support agri-food systems planning in Ontario is variable. Of 183 respondents, 156 (85%) indicated that their municipality had less than adequate capacity to respond to and support the agri-food system. Respondents were more likely to report higher levels of capacity if the municipality where they worked had in-house

planning staff, was an upper-tier municipality, was located in southern Ontario (MMAH Municipal Service Office West, Central, or East), or was classified as urban. This variability is evident in the reported knowledge related to key agri-food systems land use policies as well as the number of agri-food systems related initiatives a municipality supports. A similar finding was reported by Caldwell and Procter (2013) who found that planning staff were more responsive to the needs of agriculture in regions of the province where municipalities had developed staff capacity related to agricultural issues.

Municipal planning staff play a variety of roles related to municipal agri-food systems planning initiatives and often work in partnership with other municipal departments, elected officials, and external organizations. Municipal agri-food systems planning initiatives being supported across the province are diverse and include activities related to land use planning policy, agricultural and food strategies, economic development initiatives, provision of resources, training and education, and environmental stewardship. This finding is corroborated by Caldwell et al. (2020, 2021) who looked at strengthening support for the agri-food sector in the Greenbelt and highlighted 11 case studies, ranging from farm visits and buy local programs, to coordinating planning and economic development service delivery efforts.

This research also identified resources and best practices being used by municipal planning departments to support agri-food systems planning capacity, including: professional networks, provincial resources, relationship building with the local agri-food sector, and continuous learning. There are several additional resources that would be helpful for both planners and elected officials, including: training and educational opportunities, guidance documents, newsletters, relationship building, the sharing of best practices between municipalities, and additional funding to support the agri-food sector as well as municipalities in undertaking important agri-food systems planning work.

7.3 A modified conceptual framework

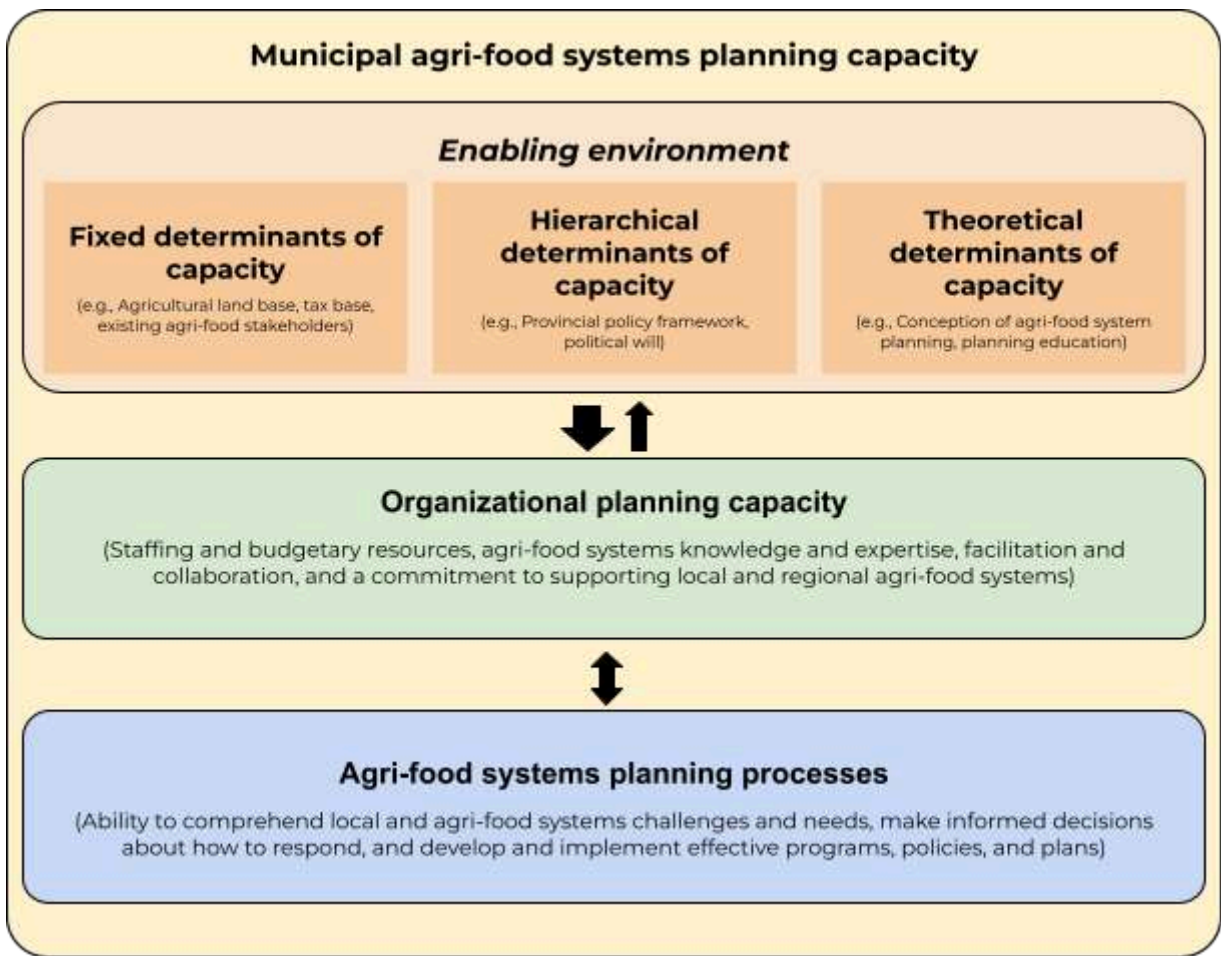
The purpose of Section 7.3 is to modify the proposed conceptual framework for municipal agri-food systems planning capacity presented in Section 2.5 of Chapter 2 to reflect the research findings and the realities of municipal agri-food systems planning in Ontario. The proposed

conceptual framework for municipal agri-food systems planning capacity as presented in Section 2.5 has been copied below as Figure 7.1.

Proposed conceptual framework for municipal agri-food systems planning capacity

Municipal agri-food systems planning capacity is the ability to comprehend local and regional agri-food systems challenges and needs, make informed decisions about how to respond, and develop and implement supportive programs, policies, and plans. Key characteristics of agri-food systems planning capacity include staffing and budgetary resources, agri-food systems knowledge and expertise, facilitation and collaboration, and a commitment to supporting sustainable local and regional agri-food systems.

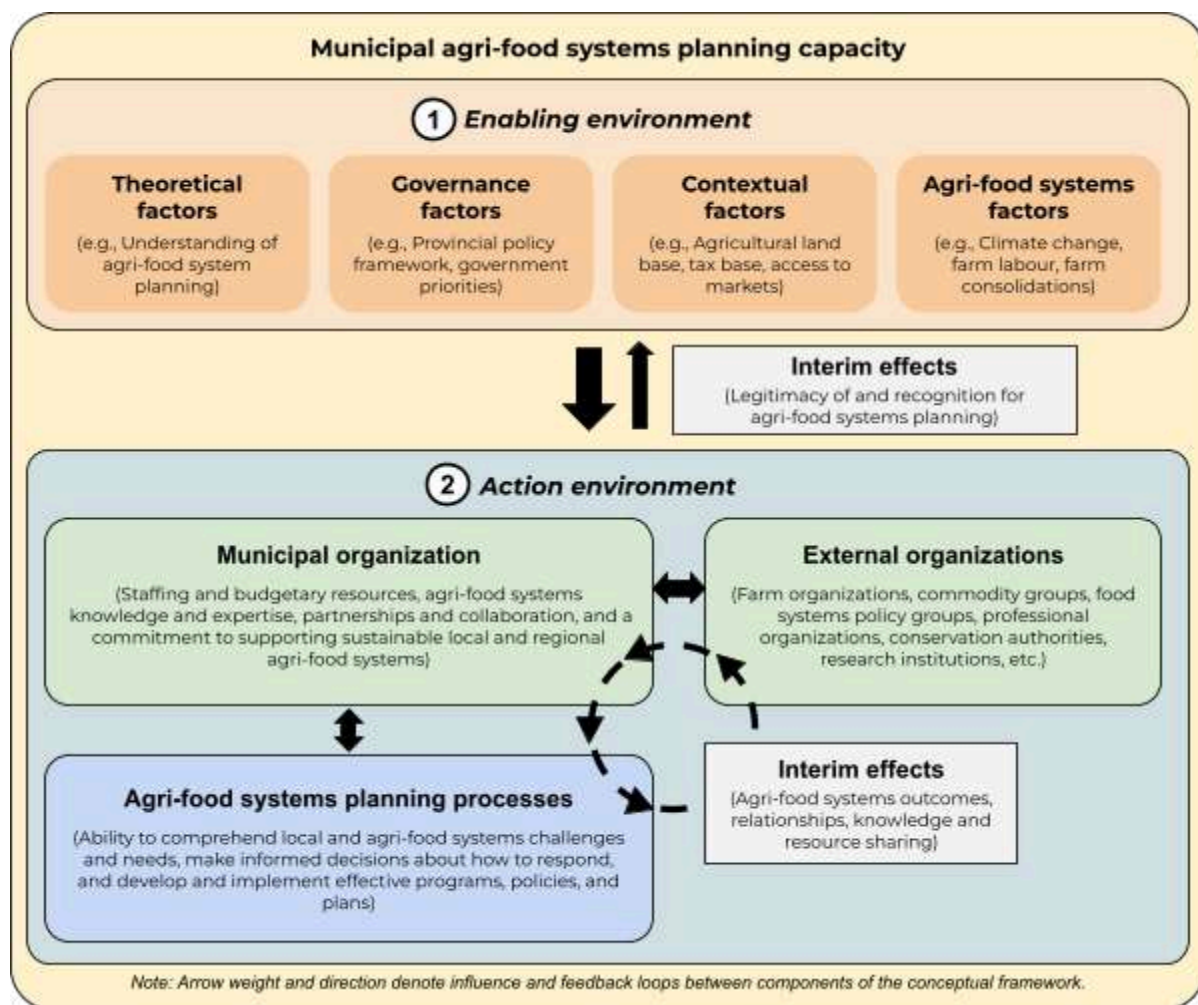
Figure 7.1 - Proposed conceptual framework for municipal agri-food systems planning capacity (adapted from Zink, 2022)



Modified conceptual framework for municipal agri-food systems planning capacity

While the proposed conceptual framework provides a helpful starting point for understanding municipal agri-food systems planning capacity as discussed by the literature, the findings of this research highlighted several areas where further detail and elaboration are needed. More specifically, the proposed framework did not fully capture the role of external stakeholders or influence of larger agri-food systems trends, and lacked detail regarding the role of feedback loops in contributing to the success of agri-food systems planning efforts. Based on these identified shortcomings a modified conceptual framework for municipal agri-food systems planning capacity has been developed and is included as Figure 7.2 below.

Figure 7.2 - Modified conceptual framework for municipal agri-food systems planning capacity



The modified conceptual framework (herein referred to as the ‘conceptual framework’) uses a systems-oriented approach (as suggested by Morgan, 2005) and is interested in the elements/actors at all levels (macro/institution, meso/organization, and micro/individual) which contribute to agri-food systems planning capacity, as well as the networks and relationships between them. The limits of the conceptual framework are defined by the research’s focus on municipal agri-food systems planning capacity.

The conceptual framework includes an enabling environment and action environment, as well as interim effects associated with interactions and relationships between the identified elements. The ‘enabling environment’ can be understood as the circumstances and conditions which influence municipal agri-food systems planning, while the ‘action environment’ includes the elements and actors that are directly involved in agri-food systems planning work. ‘Interim effects’ include relationships between elements within the conceptual framework which contribute positively to municipal agri-food systems planning capacity.

The arrows included in the conceptual framework indicate relationships between different elements, with the relative weight of each arrow indicating strength or importance of the relationship. For example, the enabling environment has a stronger influence over the action environment, than vice-versa. This makes sense because the enabling environment includes structures, institutions, and global trends which are generally slower and more difficult to change. In contrast, the action environment includes elements at the organization and individual level which are generally more nimble and responsive to change.

The following sections provide a more detailed discussion of the enabling environment, action environment, and interim effects, as well as the individual elements included in each. Key connections to the results chapters of this report are provided throughout.

7.3.1 Enabling environment

The enabling environment largely speaks to the institutions, structures, and processes in which municipal agri-food systems planning takes place, including, provincial policy direction, ideas around what agri-food systems planning encompasses, planning education, the land base and population of the municipality, as well as broader agri-food systems trends, among others.

These institutions, structures, and processes create the environment (context and conditions) for agri-food systems planning to occur and are generally difficult and slow to change. Through both the survey questionnaire and semi-structured interview process, respondents discussed the importance of the enabling environment for municipal agri-food systems planning capacity.

The enabling environment includes four elements, including: theoretical factors, governance factors, contextual factors, and agri-food systems factors. These factors are recognized as determinants to municipal agri-food systems planning capacity because they influence the environment or space in which agri-food systems planning occurs.

Theoretical factors

Theoretical factors consider how planning and agri-food systems are understood. Through data analysis it became clear that respondents had different ideas about what the agri-food system was (e.g., what types of activities would be included) and the role of municipalities in undertaking agri-food systems planning work. Theoretical factors were also discussed in the context of planning education and the lack of inclusion of rural and agricultural topics as part of the planning curriculum. Sections of the report which discuss theoretical factors include 4.3.1 Description of local agri-food systems, 4.4.6 A growing knowledge gap, and 4.5.4.3 Conceptualizations of municipal agri-food systems planning.

Governance factors

Hierarchical factors include factors associated with the land use planning system in Ontario, and Canada more broadly. The role of the Province in supporting and/or hindering municipal agri-food systems planning capacity was widely discussed by respondents (e.g., the provincial policy framework, government priorities). For example, many respondents discussed the frequency of changes to the planning process in recent years as a challenge to agri-food systems planning work. Beyond providing the policy framework, upper-levels of government provide programs and funding opportunities relevant to agri-food systems planning work (e.g., agri-food sector support, environmental stewardship programming). Sections of this report which speak to hierarchical factors include 4.4.4 and 4.5.3 regarding the land use planning framework in Ontario, and 4.4.1 Continued pressures on the agricultural land base.

Contextual factors

Contextual factors acknowledge the financial and locational realities of the municipality (e.g., agricultural land base, tax base, access to markets). Respondents often acknowledged their existing land base, including soil quality, as well as the municipal tax base as being key contributors to municipal agri-food systems planning capacity. For example, the presence of high-quality agricultural soils, proximity to markets, and development pressures (among other locational factors) were acknowledged as having implications for agri-food system planning. Sections of this report which discuss contextual factors include 4.3.1 Description of local agri-food systems, 4.3.2 Importance of agri-food systems, and 4.3.3 Frequency of dealing with agri-food related issues.

Agri-food systems factors

Agri-food systems factors considers broader trends and challenges related to agri-food systems at all scales (e.g., global, national, local). This element of the enabling environment was acknowledged by respondents who spoke to challenges associated with farm consolidation, financialization, and climate change, among other key issues. These factors impact opportunities and pressures for the agri-food sector, as well as discourse related to the importance of agri-food systems planning. Sections of this report which speak to agri-food systems factors include 4.4.1 Continued pressures on the agricultural land base, 4.4.2 ongoing challenges related to agriculture in the rural area, 4.4.3 Changing nature of agriculture, and 4.4.5 Larger food systems challenges.

7.3.2 Action environment

In contrast to the enabling environment, the action environment includes elements and actors that are directly involved in carrying out agri-food systems planning work. The action environment includes three elements - the municipal organization, external organizations, and agri-food planning processes. In this context, capacity is conceptualized as both an 'ends' and a 'means', and aims to capture both internal and external factors which comprise municipal agri-food systems planning capacity, including partnerships and collaboration, the role of municipal councils, and the quality of the planning processes involved. This approach is

supported by Davidson (1977) who wrote “Understanding the nature of agricultural areas and their dynamic is critical. But this alone will not suffice, the ability to turn this understanding into locally implementable plans is the basic ingredient.” (p. 17).

Municipal organization

The municipal organization includes factors which enable a municipality to undertake agri-food systems planning work. This includes the planning department’s resources and characteristics (staff, budget, departmental structure), knowledge of agri-food systems, as well as relationships with other municipal departments (partnerships and collaboration), and commitment to local and regional agri-food systems. These components are aligned with the findings of Loh’s 2015 comprehensive review of how planning capacity is discussed in the literature. There are several sections of this report which address municipal organization, including: 4.5.1.1 Planning service delivery, 4.5.1.2 Staffing levels and RPP, 4.5.1.3 Budget, 4.5.1.4 Planning service delivery approach, 4.5.1.6 Role of consultants, 4.5.2.1 Planning and economic development, 4.5.2.2 Other municipal departments, 4.5.3.2 Council knowledge and sources of advice related to agri-food issues, 4.5.3.3 Municipal council commitment and competing priorities, 4.5.4 A commitment to local and regional agri-food systems, and 5.3.1 Roles and responsibilities.

External organizations

External organizations were included as an element in this conceptual framework to emphasize the role of relationships and collaboration with external actors as part of municipal agri-food systems planning capacity (intergovernmental collaboration, conservation authorities, agri-food stakeholders, research institutions). In this context, it is recognized that agri-food systems planning is not solely the responsibility of municipal governments and that collaboration is a key part of meaningfully supporting the agri-food sector (Clark et al., 2017; Trudeau et al., 2021). This is supported by Hansen et al. (2020) who argue that “comprehensive food systems planning often requires the consideration of resources and processes beyond the jurisdiction of a single local government or planning agency” (p. 21). Sections of this report which speak to external organizations include 4.5.2 Relationships with other municipal departments and external actors,

5.4.4 Providing resources to the agri-food sector, 6.2 Resources and best practices being used by municipalities across Ontario, and 6.3 Municipal staff suggestions for what could help.

Agri-food systems planning processes

Agri-food systems planning processes considers processes and outcomes associated with agri-food systems planning work, including the ability to comprehend local and agri-food systems challenges and needs, make informed decisions about how to respond, and develop and implement effective programs, policies, and plans. Agri-food systems planning processes and outcomes include both regulatory and non-regulatory initiatives as well as ongoing partnerships in support of agri-food systems planning. This research identified six initiative categories related to agri-food systems planning including: land use planning policy, agricultural and food strategies, economic development initiatives, provision of resources, training and education, and environmental stewardship. Sections of this report which speak to agri-food systems planning processes include 4.5.3.1 Municipal council activities related to agri-food systems, 4.6 Implementing Ontario's agri-food systems land use policies, 5.3 Discussing municipal agri-food systems planning initiatives, and 5.4 Examples of agri-food systems planning work.

7.3.3 Interim effects

Interim effects identified as part of the conceptual framework capture relationships between elements within the conceptual framework which positively contribute to municipal agri-food systems planning capacity. Interim effects are similar to the concept of "intermediate outputs" proposed by Seguin et al. (2018) as part of their conceptual framework of policy capacity. Seguin et al. argue that "intermediate outputs can be viewed as comprising capacity itself and not just capacity-enhancing" (p. 13). Including interim effects as part of the conceptual framework acknowledges multiple, simultaneous feedback loops which contribute to successful municipal agri-food systems planning work.

For example, collaboration between the municipality (municipal organization) and external organizations contributes to agri-food systems planning processes which results in agri-food systems outcomes, as well as relationship building at the local level. In this example, the interim

effects (relationships and agri-food systems outcomes) strengthen the relationship between all three elements of the action environment, leading to more effective programs, policies, and plans. This feedback loop also provides interim effects in terms of legitimacy and recognition of municipal agri-food systems planning within the enabling environment, and has the potential to influence change (e.g., stronger farmland protection policies, increased funding for municipal agri-food systems planning work). Sections of this report which speak to interim effects include 4.5.2 Relationships with other municipal departments and external actors, 4.5.3 The land use planning framework in Ontario, 4.5.4.1 Culture of agriculture, 5.4.5 Training and education, and 6.2.3 and 6.3.5 regarding relationship building.

7.4 Implications for planning practice

Beyond informing academic thinking and discourse related to municipal agri-food systems planning capacity, this research has several implications for planning practice. As part of the data collecting process, this research encouraged elected officials and municipal planning staff to think critically about agri-food systems planning in their own municipality. These conversations were effective in highlighting areas where municipalities were already undertaking important work and identifying areas where future action was needed. Through the interview process the research team was able to share experiences and examples from across the province with interviewees who often had questions about how they could strengthen their capacity to support and respond to the agri-food sector.

To add to these successes, the findings of this research provide important insights regarding the challenges municipalities are facing in supporting the agri-food sector, what best practices are already being used by municipalities, and areas where additional resources would be helpful. These findings are particularly relevant for OMAFA along with MMAH who are the provincial ministries responsible for agri-food systems planning, including training, guidance and support for municipal governments. Other non-governmental organizations interested in agri-food systems planning, such as the OFT, OFA, and Greenbelt Foundation, among others, can leverage this research to inform their programming and policy advocacy work. Municipal staff and elected officials can use these findings to better understand their own capacity related to

agri-food systems planning including the factors which contribute to and/or hinder municipal efforts in this area. Implications of this research for planning practice can broadly be organized into three groups: (1) agri-food systems planning is diverse, (2) municipal agri-food systems planning capacity matters, (3) additional resources are needed.

7.4.1 Agri-food systems planning is diverse

The agri-food sector in Ontario is facing a number of challenges related to national and international pressures, and municipalities play an important role in supporting the sector in this context. Section 4.4 of Chapter 4 provides an overview of the issues and challenges identified by the research, including development pressures, farm succession planning, barriers to entry for new farmers, traffic and road safety, issues related to food access and food security, climate change, and the complex and turbulent land use planning regime in Ontario, among others. In response to challenges and issues, municipalities across Ontario are undertaking important agri-food systems planning work to support and respond to the agri-food sector. Agri-food systems planning initiatives include both regulatory (e.g., official plan and zoning by-law policies) and non-regulatory initiatives (e.g., water quality and buy local programs) as well as ongoing partnerships in support of agri-food systems planning (e.g., local federation of agriculture, farmer organizations).

Municipal governments, including staff and elective officials, are well-positioned to undertake agri-food systems planning work. As the most local level of government, municipalities provide services that are responsive to local realities and needs. Applying this lens to the agricultural sector, municipal planners and politicians are more likely than those found in upper levels of government to have ground truthed knowledge of the land base and its uses, as well as more regular interactions with farmers, agricultural stakeholders, and the community. In some cases, municipal politicians and staff are farmers themselves, and may advocate on behalf of the agricultural community. Specific to land use planning, municipal planners are well positioned to connect different areas of agri-food system planning work and are already familiar with coordinating work between multiple municipal departments (e.g., building, engineering, economic development) and external organizations.

This research identifies six categories of initiatives that municipalities across Ontario already support, including land use planning policy, agricultural and food strategies, economic development initiatives, providing resources, training and education, and environmental stewardship. While it may not be practical for each municipality in Ontario to pursue the full range of possible initiatives, municipal staff should endeavour to consider their options and implement those that best align with local needs and capacities. More specifically, municipal agri-food systems initiatives should be considered in the context of local and regional agri-food systems, including the agricultural land base and agri-food network, established networks and partnerships, relevant stakeholder groups, and available resources. Successful initiatives are locally responsive, reflective of community needs, and appropriately scaled to ensure long-term sustainability for the municipality.

7.4.2 Municipal agri-food systems planning capacity matters

While all municipalities in Ontario are expected to implement and uphold provincial priorities related to land use planning, the resources available to them vary widely. This research highlighted the complex and multifaceted nature of municipal agri-food systems planning capacity. Broadly speaking, this research identified four groups of factors which contribute to capacity in this regard, including: (1) planning department structure and personnel, (2) relationships with other municipal departments and external actors, (3) the land use planning framework in Ontario, and (4) a commitment to local and regional agri-food systems. These factors are reflected in the modified conceptual framework for municipal agri-food systems planning capacity (Figure 7.2), recognizing the importance of the context in which agri-food systems planning occurs (the enabling environment), as well as the resources and tools available within the municipality (the action environment).

The factors which contribute most significantly to municipal agri-food system planning capacity vary between municipalities, and are largely reflective of local realities. For example, a well staffed planning department may develop a specialized agricultural or agri-food systems role and draw capacity from that individual's expertise. Other municipalities, who have a small staff complement, may rely more heavily on partnerships with external organizations such as the local county federation of agriculture or food policy group to strengthen their capacity in this

regard. The factors identified by this research provide a menu of options for municipalities to consider when looking to strengthen their ability to undertake effective agri-food systems planning work. This is supported by De Loë et al. (2002) who suggests that municipalities with limited resources should consider strengthening relationships (e.g., external organizations, political leadership, citizen involvement) as well as developing technical, financial and organizational capacity.

This research also confirms that municipal agri-food systems planning capacity in Ontario is limited. While some variation in capacity exists across the province, the majority of respondents reported that their municipality had less than adequate capacity to respond to and support the agri-food sector. This finding is consistent with trends reported by Hansen et al. at the national level who found that “knowledge of food systems, and associated planning skills are highly variable, and often limited across the country” (2020, p. 20). Limited agri-food systems planning capacity impacts the ability of municipal governments’ to consistently and effectively implement agricultural land use planning policies and deliver on Provincial priorities, as well as their ability to pursue locally adapted initiatives which respond to and support the sector.

Through this research upper-tier municipalities in central Ontario reported significantly higher levels of capacity to respond to and support the agri-food system. This finding provides important insight regarding the value of two-tier municipal planning systems and the role that regions and counties play in coordinating and supporting agri-food systems planning work across the lower-tier municipalities in their jurisdiction. Upper-tier municipalities are also well suited to coordinate across regional boundaries and consider agri-food systems at a broader scale than lower-tier municipalities. This finding is particularly relevant for the Provincial government, as it provides evidence that the planning function of upper-tier municipalities is essential to the long-term viability and sustainability of the agri-food sector; it also provides evidence that tailored policy and program initiatives are needed to strengthen agri-food systems planning capacity in:

- Municipalities that do not have in-house planning staff;
- Single- and lower-tier municipalities;
- Municipalities located in northern Ontario; and

- Rural municipalities.

7.4.3 Additional resources are needed

Building capacity for effective agri-food systems planning in Ontario is a shared responsibility and requires additional resources and support on multiple fronts. This research identifies a number of resources and best practices which should be considered by stakeholders working towards more effective agri-food system planning in the province. Six action areas are identified, including training and education, guidance documents and newsletters, sharing of best practices, relationship building, agri-food systems planning leadership, and funding and staff resources.

The Provincial Government, and more specifically OMAFA, has a clear role to play in undertaking work to support effective agricultural land use planning. For example, respondents indicated that they would benefit from training regarding a range of agri-food systems planning issues and topics (e.g., MDS, surplus farm dwelling severances, agricultural systems approach), as well as learning about the agri-food sector more broadly. OMAFA agricultural land use planning staff have provided training on these topics in the past and should work to address current demand and interest. Key topics that respondents indicated new and/or updated guidance and training would be helpful include: permitted uses in prime agricultural areas, MDS, agricultural impact assessments, lot creation in rural and prime agricultural areas, specialty crop areas, urban agriculture, agricultural production on rural lands, and agriculture in northern Ontario.

Respondents also indicated that they would benefit from more reliable, accessible, and tailored Provincial advice on agricultural land use planning topics, and acknowledged that additional staff resources may be needed at both OMAFA and MMAH to provide this level of support. This research also provides a call for stronger farmland protection policies in the province, including firm urban boundaries, identification of specialty crop areas, integration of urban and rural food systems, and a more consistent policy framework which recognizes that prime agricultural land is a finite non-renewable resource.

Professional organizations, such as OPPI and the Canadian Institute of Planners (CIP), and academic institutions also have a key role to play in providing resources and learning opportunities related to agri-food systems planning. These organizations should consider the inclusion of agri-food systems planning topics as part of the curriculum for accredited planning schools and provide continuing education opportunities for professionals working in this space. This research also identifies opportunities for collaboration between organizations involved in agri-food systems planning work. For example, UoG, OFA, and OFT could work together to develop an agricultural land use planning 101 training guide for planners. Partnerships of this nature could leverage existing resources and expertise to address the growing demand for agri-food system planning training and resources. This recommendation is supported by Hansen et al. (2020) who argue that “while food systems planning is a subject of interest for students within accredited planning programs, outside of the Rural Planning and Development Program at the University of Guelph, training for food systems planners is limited” (p. 20).

Beyond the provision of additional training and learning opportunities, there are several activities individual planners or planning departments can pursue to strengthen capacity at the individual and organizational level, such as building relationships with the agri-food sector and undertaking self-directed learning. Municipal staff should work to foster a culture of agriculture in their municipality which clearly recognizes agri-food systems as essential municipal infrastructure (e.g., food systems as equally important to roads, water, waste, and emergency services). In addition to land use planning staff, other municipal departments are involved in agri-food systems planning work and cross-departmental learning opportunities may be helpful in this regard. For example, organized farm visits with both staff and elected officials provide on-the-ground knowledge of the agri-food system and the opportunity to better understand changes and challenges facing the sector. Developing an agri-food systems planning network to share innovative approaches, best practices, and lessons learned was another idea identified by respondents which would strengthen capacity in this area.

Chapter 6 of this report provides a fulsome discussion of the resources already being used to support agri-food systems planning work, as well as ideas and suggestions for additional resources that would be helpful for both planning staff and municipal councils.

7.5 Areas for future research

This research lays the groundwork for future research related to agri-food systems planning, including developing a model to rank municipal agri-food systems planning capacity, evaluating the effectiveness of agri-food systems planning, and expanding Ontario's agricultural system approach.

7.5.1 Developing a model to rank municipal agri-food systems planning capacity

While this research developed a conceptual framework for municipal agri-food systems planning capacity, it did not endeavor to test the framework. Future research could develop a model of municipal agri-food systems planning capacity which would allow for the ranking of municipalities based on their performance. Building a model of this nature would require the identification of quantitative and qualitative inputs and output factors. Input factors could include measurements related to staffing levels, budget, commitment to agri-food systems, relationships with the agri-food sector, and leadership on council. Output factors in this regard would consider the goals and objectives of agri-food systems planning and could include indicators such as age of planning documents (e.g., municipal plans and zoning by-laws), the total number of agri-food systems planning initiatives, the amount of farmland protected, or the amount of municipal land being used for agri-food systems supportive activities (e.g., farmers markets, community gardens). Future research in this area can leverage the findings of this study, including the conceptual framework for municipal agri-food systems planning capacity, as a starting point for this work.

7.5.2 Evaluating the effectiveness of agri-food systems planning

A second noteworthy area for future research is understanding the impacts and effectiveness of agri-food systems initiatives in supporting the agri-food sector. For example, how are agri-food systems planning initiatives experienced and perceived by the agri-food sector. Are there certain types of initiatives that are more impactful than others? How does the general public benefit from municipal agri-food systems planning work? This type of research would substantiate the importance of agri-food systems planning work and would leverage qualitative research

methods to develop a deeper understanding of the impacts of agri-food systems planning work. It would also be helpful to understand the economic value of supporting local and regional agri-food systems. For example, do stewardship initiatives such as rural clean water programs provide financial returns on the farm? What is the financial return for the municipality?

7.5.3 Expanding Ontario's agricultural system approach

Another area for research that became apparent through both the literature review and data collection efforts associated with this project, is the opportunity to expand Ontario's agricultural system approach to include food systems more broadly (e.g., urban agriculture, climate change, food justice and equity, indigenous food sovereignty). This research, informed by Ontario's agricultural system approach, focuses primarily on agricultural production (including the land base, inputs, and initial processing and transportation) and largely overlooks other pieces of the supply chain (e.g., storage, packaging, distribution, retail, and waste) as well as social, cultural, and environmental aspects of food systems. Hansen et al. (2021) found that "planners and practitioners are increasingly aware of the complex nature of food systems planning, food system inequities, and the connections between food system outcomes, climate change, equity and community well-being" (p. 27). In this context, future research is needed to investigate the way this awareness informs agri-food systems planning work in Ontario. Research in this area could look to identify municipalities who are leading work in this area, and document lessons learned for other municipalities as well as policy recommendations for the Province to consider.

7.5.4 Other research topics

There were several other research areas identified by this report as needing further investigation. For example, respondents from eastern and northern Ontario reported that agriculture in their municipalities' was often overlooked and they faced challenges with implementing provincial policy in their geography. One idea that was suggested in this regard, was the opportunity to support the identification of "regionally significant agricultural lands". Respondents also discussed the need for more planning tools and approaches to support small-scale food production. Future research could focus on agri-food systems planning in

traditionally underserved municipalities in eastern and northern Ontario to better understand the unique pressure and opportunities in these areas.

Understanding the cumulative impact of non-agricultural uses on the agricultural system was another research topic that was raised by several participants. The current land use planning framework aims to manage the loss of agricultural land and impacts on the agricultural system, but does not provide permanent protection for agricultural lands. As a result, rural and agricultural areas in Ontario are becoming busier with non-agricultural uses (e.g., aggregate operations, wedding venues, industrial businesses, recreational uses). Research in this area could look to understand the cumulative impact of these uses on Ontario's agricultural system and provide recommendations for how to better protect the agri-food sector, including the agricultural land base.

Another potential research topic would be to more broadly understand the state of land use planning capacity in Ontario. This research suggests that municipal planning departments, as well as the Province, may be experiencing capacity challenges across multiple areas of land use planning work. Future research in this area could look to better understand which factors are contributing to limited capacity (e.g., increased development pressures, rapidly changing land use planning framework) and provide recommendations about how the profession can navigate these challenges.

7.6 Conclusion

The goal of this research is to better understand municipal agri-food systems planning capacity across Ontario and to better position municipal planning departments to respond to and support local and regional agri-food systems. This report provides a wealth of information related to this goal and should be read in its entirety. For anyone short on time or in need of a summary, five key findings are worth reiterating.

1. **Municipalities are the most local level of government and play an important role in facilitating and supporting agri-food systems** through agri-food systems planning efforts. Agri-food systems planning processes and outcomes include both regulatory and non-regulatory initiatives as well as ongoing partnerships in support of agri-food systems

planning. Initiatives being supported by municipalities across Ontario are diverse, and include land use planning policy, agricultural and food strategies, economic development initiatives, providing resources, training and education, and environmental stewardship.

2. **Municipal agri-food systems planning capacity is variable across Ontario, and overall low.** 85% of respondents indicated that their capacity related to agri-food systems planning was less than adequate. Respondents were more likely to report higher levels of capacity if the municipality where they worked had in-house planning staff, was an upper-tier municipality, was located in southern Ontario, or was classified as urban. Upper-tier municipalities play an essential role in supporting municipal agri-food systems planning efforts.
3. **Municipal agri-food systems planning capacity is complex and multifaceted,** and includes factors related to planning department structure and personnel, relationships with other municipal departments and external actors, the land use planning framework in Ontario, and a commitment to local and regional agri-food systems. Municipal capacity in this regard is impacted by factors both internal and external to municipal governments and at multiple levels (e.g., system, organization, and individual). This means that there are multiple and diverse opportunities to strengthen municipal agri-food systems planning capacity.
4. **Municipal planning departments are just one actor involved in agri-food systems work and play an important role in coordinating efforts.** There are a number of stakeholders both internal and external to municipal government that play a key role in agri-food systems planning (e.g., economic development staff, agri-food systems stakeholders, conservation authorities). Municipal planning staff are well positioned to connect different areas of agri-food system planning work and are already familiar with coordinating work between multiple municipal departments (e.g., building, engineering, economic development) and external organizations.
5. **Additional resources are needed to support municipal agri-food systems planning efforts,** including: training and education, guidance documents and newsletters, sharing

of best practices, relationship building, agri-food systems planning leadership, and funding and staff resources. Organizations that have a key role to play in providing these resources include the Province (OMAFRA and MMAH), professional organizations (e.g., OPPI, CIP), as well as partner organizations such as OFA (and other farm organizations), OFT, the Greenbelt Foundation, and the University of Guelph.

In a world that is facing increasingly complex problems—from climate change and socio-political unrest to global health crises—securing our agri-food system is more important than ever. Through land use planning, economic development, environmental stewardship, and broader decision making, municipal governments play an important role in supporting and responding to agri-food systems within their jurisdiction. This research provides insights regarding municipal agri-food systems planning capacity in Ontario, including a review of factors which contribute and/or hinder success in this area, municipal examples and mini case studies, and recommendations and best practices regarding the resources needed to support municipalities undertaking important agri-food systems planning work.

I think this research has the capacity to influence some real change, because regardless of what size you are, or what budget you have, there are things the planning department can do [to support the agri-food system]. (Central, UT, Planner Interview)

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Appendix A - Elected Official Survey Questionnaire

Consent



SCHOOL OF
**ENVIRONMENTAL DESIGN
AND RURAL DEVELOPMENT**

Assessing the Capacity of Municipalities to Respond to and Support Agri-food Systems in Ontario

Elected Official Survey

This letter is an invitation to participate in a research project being conducted by Dr. Wayne Caldwell from the School of Environmental Design and Rural Development at the University of Guelph. This project is sponsored by the Ontario Agri-Food Innovation Alliance, a partnership between the Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph. This project seeks to inventory municipal and planning department capacity as it relates to agri-food priorities and issues. The research area includes all upper-, single-, and lower-tier municipalities and aims to have representation from both Northern and Southern Ontario. The following text provides more information about the project, how the collected data will be used, and the benefits of participating.

Project background

A vibrant agricultural sector in Ontario is dependent upon a knowledgeable and supportive municipal sector. With the evolving nature of municipal government and agriculture, it is important that municipalities have the capacity (staff, time, expertise) to respond to new and emerging agricultural issues (climate change, new farming practices, agritourism, etc.). It is equally important that municipal elected officials understand the needs of agriculture and are well positioned to make timely, relevant decisions in support of the agri-food sector and the economy of rural Ontario.

Research methods

This study includes three different types of data collection that will be considered in conjunction with a review of municipal documents (e.g., official plans, budgets, etc.):

- A survey sent to elected officials,
- A survey sent to the most senior planner at each municipality, and
- A semi-structured interview with a member of the planning department (upper- and single-tier municipalities).

All upper-, single-, and lower-tier municipalities in Ontario will be contacted to evaluate their capacity to support the agri-food industry and respond to evolving agricultural issues.

Your participation

Participation in this research project is voluntary. If you are able to participate we ask that you complete this survey. **The survey takes approximately 10-15 minutes to complete and is a combination of multiple choice and written responses (full sentences or point form is appropriate).** The survey will ask questions related to council's background or knowledge on agriculture, council's process for evaluating agricultural issues, resources used by council, and opportunities for increasing capacity related to agricultural and rural affairs.

We are looking for municipalities to include as a case study in this project; if you are interested in being involved in this process please contact a member of the research team to let us know. The case study will require an interview to advance discussions on this topic. Interviews will be conducted remotely by phone or Zoom.

Anonymity and confidentiality

The information you provide will remain anonymous for the purpose of this research project and any resulting publications. That being said, please only share information that you would be comfortable with becoming public as your identity may be inferred by your position and/or geographic information. Keep in mind that you can stop the survey at any time or skip a question if you do not feel comfortable answering it. Since this survey is anonymous, you will not be able to withdraw your response. Confidentiality cannot be guaranteed while data are in transit over the internet. Anonymized quotations may be used. The anticipated risks to you as a participant in this project are very low but may include minimal psychological, social, economic or privacy related risks. You can stop the survey at any time or skip a question if you do not feel comfortable answering it.

This project has been reviewed by the Research Ethics Board for compliance with federal guidelines for research involving human participants. If you have questions regarding your rights and welfare as a research participant in this study (REB#20-04-013), please contact: Manager, Research Ethics; University of Guelph; reb@uoguelph.ca; (519) 824-4120 (ext. 56606).

Benefits

The deliverable of this project is a report for OMAFRA detailing the research findings and providing recommendations for how to better position municipalities to respond to and support agriculture and agri-food in the planning process. This report will be made available to all participants and will provide an overview of municipal capacity as well as recommendations for best practices when dealing with agricultural issues. It is also anticipated that findings will be presented in non-academic journals such as Municipal World and at conferences such as the Association of Collegiate Planning Schools annual conference. It is our intent that the findings will be of benefit to you and other municipalities across Ontario when dealing with agricultural and agri-food issues. Please let one of the research team members know if you are interested in receiving a copy of the final report.

We are looking forward to speaking with you and thank you in advance for your assistance.

Sincerely,

Natasha Gaudio Harrison, Shanley Weston, and Regan Zink

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A copy of this letter is available by emailing any of the researchers listed above. We thank you for your time and participation in this research project.

To acknowledge your rights as a participant and begin the survey, please click on the 'Next' button below.

Section 1: About the Municipality

Which municipality do you represent? Please include the full name of your municipality (e.g., City of Thunder Bay, County of Brant). For elected officials who represent more than one Council, please select the one you are most comfortable speaking about, or complete this survey for each municipality separately.

How many years (in total) have you served as an elected official in this jurisdiction?

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important Slightly important Moderately important Very important Extremely important

Describe the agricultural and agri-food activities that occur in your municipality. (e.g., is there a dominant crop, intensive livestock operations, significant on farm/value added practices, active agritourism industry, etc.)

What are the major (site specific or municipality wide) issues related to agriculture in your municipality? (e.g. changing crops, cannabis, wind turbines, livestock, normal farm practices, on-farm businesses, traffic, etc.)

Does the municipality have a planning department?

- Yes, the municipality has a planning department
- No, the municipality does not have a planning department

Other (please provide a description below)

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐
Agricultural strategy	☐	☐	☐	☐	☐
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

Section 2: Council's role in agri-food systems

How frequently does Council deal with agriculture or agri-food related issues?

Almost never A few times a year On a monthly basis On a weekly basis On a daily basis

Which statement best captures how Council as a whole considers agriculture?

Agriculture is critically important to our community and our decisions reflect that

Agriculture is important but our decisions do not always reflect that

Agriculture is somewhat important but we have other priorities

Agriculture is not a priority in our community

To your knowledge, what is Council's background in agriculture? (Check all that apply for at least one elected official.)

Council member(s) have post secondary education related to agriculture and rural studies

Council member(s) work or have worked in agribusiness

Council member(s) own (or previously owned) a hobby farm

Council member(s) own (or previously owned) a farm

Council member(s) currently farm

Council member(s) have family members who farm

Council member(s) grew up on a farm or had a part-time job when they were younger on a farm

Council member(s) grew up in a primarily agricultural or related area

Council member(s) learned about agricultural issues through work as a planner

Council member(s) are personally interested in agriculture

Council member(s) have limited background in agriculture

Other (please provide a description below)

In total, how many council members have a background in agriculture?

As a Council member, what role do you play in agriculture, if any? Select all that apply.

Member of the municipal agricultural advisory committee

Member of another agricultural advisory committee (e.g. Golden Horseshoe Food and Farming Alliance, conservation authority agricultural committee)

Committee of Adjustments member

Economic development committee member (as it relates to agriculture and/or the rural area)

Development of or approval for an agricultural economic development strategy

Consideration of official plan amendments, zoning by-law amendments or severance applications that come before Council (related to agriculture and farmland)

Environmental committee member (as it relates to agriculture and/or the rural area)

Involvement in climate change adaptation strategies (as it relates to agriculture)

Review of aggregate applications

I play no role in agriculture

Other (please provide a description below)

When an agricultural issue arises that Council is unfamiliar with, who does Council turn to for advice? Select all that apply.

Staff

Agricultural advisory committee

Federation of Agriculture (county level)

Guidance from higher levels of government (e.g. upper tier, provincial (OMAFRA rural planner and rural economic development advisors), or federal government)

Conservation authorities

Consultants

Research institutions

I cannot think of a time when Council needed additional advice regarding an agricultural issue

Other (please provide a description below)

Pick the statement below that **best** captures Council's collective approach to making decisions regarding agricultural issues:

We generally have strong leadership on Council related to agricultural issues and feel confident in our ability to make decisions

We rely on staff when agricultural issues arise and have confidence in their advice

We rely on the agricultural advisory committee when agricultural issues arise and have confidence in their advice

We rely on staff and the agricultural advisory committee when agricultural issues arise and have confidence in their advice

We struggle with agricultural issues and do not have consistent/reliable access to agricultural expertise

Issues related to agriculture do not come up often

Other (please provide a description below)

What challenges does your Council face in making decisions related to agriculture?

What would help your Council make more informed decisions related to agriculture?

Mandatory training

Additional training and workshop opportunities

Farm visits

Access to tools (e.g. guides, reports)

Increased staff capacity

Newsletter updates about the agricultural sector

Other (please provide a description below)

Do you have any other comments about agriculture in your community that you would like to note?

Section 3: Contact information and follow-up interview

As part of our research we will be selecting case studies to exemplify agricultural issues in Ontario. Please provide your name, email, and phone number if you are okay with being contacted with follow-up questions.

Name

Position/Role

Email

Phone number

Is there anyone else (e.g. staff, committee representative, etc.) who you think we should also talk to about agricultural planning and development? If so, please provide their contact information below.

Name

Position/Role

Email

Phone number

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Appendix B1 - Planner Survey Questionnaire (Upper- and single-tier municipalities)

Consent



SCHOOL OF
**ENVIRONMENTAL DESIGN
AND RURAL DEVELOPMENT**

Assessing the Capacity of Municipalities to Respond to and Support Agri-food Systems in Ontario

Planning Services Survey

This letter is an invitation to participate in a research project being conducted by Dr. Wayne Caldwell from the School of Environmental Design and Rural Development at the University of Guelph. This project is sponsored by the Ontario Agri-Food Innovation Alliance, a partnership between the Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph. This project seeks to inventory municipal and planning department capacity as it relates to agri-food priorities and issues. The research area includes all upper-, single-, and lower-tier municipalities and aims to have representation from both Northern and Southern Ontario. The following text provides more information about the project, how the collected data will be used, and the benefits of participating.

Project background

A vibrant agricultural sector in Ontario is dependent upon a knowledgeable and supportive municipal sector. With the evolving nature of municipal government and agriculture, it is important that municipalities have the capacity (staff, time, expertise) to respond to new and emerging agricultural issues (climate change, new farming practices, agritourism, etc.). It is equally important that municipal elected officials understand the needs of agriculture and are well positioned to make timely, relevant decisions in support of the agri-food sector and the economy of rural Ontario.

Research methods

This study includes three different types of data collection that will be considered in conjunction with a review of municipal documents (e.g., official plans, budgets, etc.):

- A survey sent to elected officials,
- A survey sent to the most senior planner at each municipality, and
- A semi-structured interview with a member of the planning department (upper- and single-tier municipalities).

All upper-, single-, and lower-tier municipalities in Ontario will be contacted to evaluate their capacity to support the agri-food industry and respond to evolving agricultural issues.

Your participation

Participation in this research project is voluntary. *If you are able to participate* we ask that you complete this survey. **The survey takes approximately 10-15 minutes to complete and is a combination of multiple choice and written responses (full sentences or point form is appropriate).** The survey will ask questions related to staff and budgetary capacity, agricultural knowledge, resources used, and agri-food activities in your municipality. *If you are unable to participate* we ask that you reply to our email letting us know and if possible recommending another individual in a similar role that we could contact.

Following your completion of the survey, we would like to set up an interview to discuss the research further with either yourself or another senior staff member. The interview will ask questions related to staff background, municipal initiatives, and opportunities for strengthening capacity related to agriculture, etc. Interviews will be conducted remotely by phone or Zoom and will be recorded for note taking and transcription purposes. While Zoom records both video and audio, only the audio recording will be retained for research purposes. The Zoom call has been set so that your camera will be off when you join the meeting. If you do not wish to have your video captured, please do not turn it on.

Anonymity and confidentiality

Identity and contact related information (name, email, phone number) of participants will only be used for the administrative purposes and will be kept until five years after the study has been completed (April 30, 2029). Your name will not appear in any research or report resulting from this project. That being said, please only share information that you would be comfortable with becoming public as your identity may be inferred either by your position and/or geographic information. Confidentiality cannot be guaranteed while data are in transit over the internet.

Anonymized quotations may be used. The anticipated risks to you as a participant in this project are very low but may include minimal psychological, social, economic and privacy related risks.

You can stop the survey at any time or skip a question if you do not feel comfortable answering it. Additionally, you are able to withdraw or alter your response until December 31, 2023. If you wish to revise or withdraw your response to this survey, please contact one of the research team members.

This project has been reviewed by the Research Ethics Board for compliance with federal guidelines for research involving human participants. If you have questions regarding your rights and welfare as a research participant in this study (REB#20-04-013), please contact: Manager, Research Ethics; University of Guelph; reb@uoguelph.ca; (519) 824-4120 (ext. 56606).

Benefits

The deliverable of this project is a report for OMAFRA detailing the research findings and providing recommendations for how to better position municipalities to respond to and support agriculture and agri-food in the planning process. This report will be made available to all participants and will provide an overview of municipal capacity as well as recommendations for best practices when dealing with agricultural issues. It is also anticipated that findings will be presented in non-academic journals such as Municipal World and at conferences such as the Association of Collegiate Planning Schools annual conference. It is our intent that the findings will be of benefit to you and other municipalities across Ontario when dealing with agricultural and agri-food issues. Please let one of the research team members know if you are interested in receiving a copy of the final report.

We are looking forward to speaking with you and thank you in advance for your assistance.

Sincerely,

Natasha Gaudio Harrison, Shanley Weston, and Regan Zink

Graduate Research Assistants, Rural Planning and Development Program School of Environmental Design and Rural Development, University of Guelph

Supervisor: Dr. Wayne Caldwell

Wayne Caldwell: wcaldwel@uoguelph.ca

Natasha Gaudio Harrison: ngaudioh@uoguelph.ca

Shanley Weston: westons@uoguelph.ca

Regan Zink: zinkr@uoguelph.ca

A copy of this letter is available by emailing any of the researchers listed above. We thank you for your time and participation in this research project.

To acknowledge your rights as a participant and begin the survey, please click on the 'Next' button below.

About Your Municipality + Conditional Questions

Which municipality do you work for? Please include the full name of your municipality (e.g., City of Thunder Bay, County of Brant).

If you work for more than one municipality please select the one you are most comfortable speaking about, or complete this survey for each municipality separately.

Which of the following best describes your municipality's delivery of planning service?

Planning is its own department

Planning is included as part of a larger department

The municipality does not have an internal planning department nor does it employ planning staff

Which department is planning services a part of?

Planning Department

When was the planning department established?

Pre 1950s

1950-1959

1960-1969

1970-1979

1980-1989

1990-1999

2000-2009

Post 2010

Not sure

In the planning department, how many of the following staff types are there?

Please provide the full-time equivalent for each staff type. (Please enter a value in each of the fields below.)

Planners:

Support staff:

Other (you will have the opportunity to explain in the next question):

Who have you included in the "Other" category of staff? (e.g., economic development staff, agronomist, forestry professional)

How many staff in the planning department are RPP or candidate members? (Please enter a value in each of the fields below.)

RPP:

Candidate:

What is the approximate annual budget of the planning department? Please also comment if the budget fluctuates significantly year-to-year.

Can you provide any insight as to why the annual budget fluctuates significantly from year-to-year?

Does your planning department ever use the services of a planning consultant?

Never - The planning department never uses the services of consultants

Rarely - The planning department retains the services of a consultants less than once a year for special cases, or during periods of staff turnover

Sometimes - The planning department retains the services of a consultants on occasion, 2-3 times a year

Often - The planning department retains the services of consultants on a monthly basis

Always - All municipal planning activities are supported by the services of consultants

What types of activities are consultants retained for? (e.g., official plans, strategic planning, providing additional support on development review, etc.)

Planning Department - Focusing on Agri-food Systems

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important Slightly important

Moderately
important

Very important

Extremely
important

How frequently does the planning department deal with agriculture and agri-food related issues?

Almost never A few times a year On a monthly basis On a weekly basis On a daily basis

How many staff within the following departments (full-time equivalent) are **substantially dedicated** to agricultural and agri-food related issues?

E.g., A development planner assigned to a jurisdiction composed of primarily prime agricultural land, a policy planner dedicated to agricultural policy, an Economic Development Officer whose role is dedicated to growing the agricultural sector.

	No staff	Less than 1 full-time staff	1 full-time staff	2-3 full-time staff	4 or more full-time staff	Not sure	This department does not exist
Planning	☐	☐	☐	☐	☐	☐	☐
Tourism	☐	☐	☐	☐	☐	☐	☐
Economic Development	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

Which other departments have staff dedicated to agricultural and agri-food related issues?

To your knowledge, what is the background of staff within the planning department? (Select all that apply for at least one staff.)

- Staff have post secondary education related to agriculture and rural studies
- Staff work or have worked in agribusiness
- Staff own (or previously owned) a hobby farm

Staff own (or previously owned) a farm

Staff currently farm

Staff have family members who farm

Staff grew up on a farm or had a part-time job when they were younger on a farm

Staff grew up in a primarily agricultural or related area

Staff learned about agricultural issues through on the job training

Staff are personally interested in agriculture

Staff have limited background in agriculture

Other (please provide a description below)

In total, how many planning staff have a background in agriculture?

The following four policies/practices are relevant to planning for agriculture in Ontario.
How knowledgeable is the planning department about the following:

(Select the name to open information about the initiative in a new window).

	We have no knowledge of this on staff	We have some knowledge of this on staff	We have expertise on staff
Minimum Distance Separation (MDS)	☐	☐	☐
The agriculture system approach	☐	☐	☐
Farming and Food Production Protection Act (FFPPA) (Normal farm practices)	☐	☐	☐
Agricultural impact assessments	☐	☐	☐

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐
Agricultural strategy	☐	☐	☐	☐	☐
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

For any of the above initiatives to which you answered no, have staff taken steps to bring these forward to council in the past?

How would you rate your municipality's capacity to respond to and support the agri-food system?

Limited capacity - we frequently need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Some capacity - we sometimes need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Adequate capacity - we rarely or never need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Do you have any other comments about agriculture in your community that you would like to note?

Contact Information and Follow-up Interview

We would like to set up an interview to further discuss. Please provide your contact information below. If you feel there is a more appropriate staff member we should interview, please provide their contact information instead.

Name

Position/Role

Email

Phone

Is there anyone else from your municipality (e.g. a different department, committee representative) who you think we should also talk to about agricultural planning and development? If so, please provide their contact information below.

Name

Position/Role

Email

Phone number

Planning Staff

When did your municipality first provide in-house planning services?

Pre 1950s

1950-1959

1960-1969

1970-1979

1980-1989

1990-1999

2000-2009

Post 2010

Not sure

How many staff are involved in providing planning services? (Please enter a value in each of the fields below.)

Planners:

Support staff:

Other (you will have the opportunity to explain in the next question):

Who have you included in the "Other" category of staff (e.g., economic development staff, agronomist, forestry professional)?

How many planning staff are RPP or candidate members? (Please enter a value in each of the fields below.)

RPP:

Candidate:

What is the approximate annual budget for planning services? Please also comment if the budget fluctuates significantly year-to-year.

Does your municipality ever use the services of a planning consultant?

Never - The municipality never uses the services of consultants to provide planning services

Rarely - The municipality retains the services of a consultants less than once a year for special cases, or during periods of staff turnover

Sometimes - The planning department retains the services of a consultants on occasion, 2-3 times a year

Often - The planning department retains the services of consultants on a monthly basis

Always - All municipal planning activities are supported by the services of consultants

What types of activities are consultants retained for? (e.g., official plans, strategic planning, providing additional support on development review, etc.)

Planning Staff - Focusing on Agri-food Systems

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important	Slightly important	Moderately important	Very important	Extremely important

How frequently do planning staff deal with agriculture and agri-food related issues?

Almost never	A few times a year	On a monthly basis	On a weekly basis	On a daily basis

How many staff within the following departments (full-time equivalent) are **substantially dedicated** to agricultural and agri-food related issues?

E.g., A development planner assigned to a jurisdiction composed of primarily prime agricultural land, a policy planner dedicated to agricultural policy, an Economic Development Officer whose role is dedicated to growing the agricultural sector.

	No staff	Less than 1 full-time staff	1 full-time staff	2-3 full-time staff	4 or more full-time staff	Not sure	This department does not exist
Planning	☐	☐	☐	☐	☐	☐	☐
Tourism	☐	☐	☐	☐	☐	☐	☐
Economic Development	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

Which other departments have staff dedicated to agricultural and agri-food related issues?

To your knowledge, what is the background of planning staff? (Select all that apply for at least one staff.)

- Staff have post secondary education related to agriculture and rural studies
- Staff work or have worked in agribusiness
- Staff own (or previously owned) a hobby farm
- Staff own (or previously owned) a farm
- Staff currently farm
- Staff have family members who farm
- Staff grew up on a farm or had a part-time job when they were younger on a farm

- Staff grew up in a primarily agricultural or related area
- Staff learned about agricultural issues through on the job training
- Staff are personally interested in agriculture
- Staff have limited background in agriculture

Other (please provide a description below)

In total, how many planning staff have a background in agriculture?

The following four policies/practices are relevant to planning for agriculture in Ontario. How knowledgeable are planning staff about the following:

(Select the name to open information about the initiative in a new window).

	We have no knowledge of this on staff	We have some knowledge of this on staff	We have expertise on staff
Minimum Distance Separation (MDS)	☐	☐	☐
The agriculture system approach	☐	☐	☐
Farming and Food Production Protection Act (FFPPA) (Normal farm practices)	☐	☐	☐
Agricultural impact assessments	☐	☐	☐

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural strategy	☐	☐	☐	☐	☐
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

For any of the above initiatives to which you answered no, have staff taken steps to bring these forward to council in the past?

How would you rate your municipality's capacity to respond to and support the agri-food system?

Limited capacity - we frequently need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Some capacity - we sometimes need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Adequate capacity - we rarely or never need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Do you have any other comments about agriculture in your community that you would like to note?

No Planning Department

How are planning services provided in your municipality? (Select all that apply)

We rely on consultants to provide planning services

We have a staff member who provides planning support

Planning services are provided at a regional or district level

Other

Please explain how planning services are provided in your municipality.

If applicable, what types of activities are consultants retained for? (e.g., development review, official plans, strategic planning, etc.)

What is the approximate annual budget for planning services? Please also comment if the budget fluctuates significantly year-to-year.

No Planning Department - Focusing on Agri-food Systems

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important

Slightly important

Moderately important

Very important

Extremely important

How frequently does the municipality deal with agriculture and agri-food related issues?

Almost never

A few times a year

On a monthly basis

On a weekly basis

On a daily basis

How many staff within the following departments (full-time equivalent) are **substantially dedicated** to agricultural and agri-food related issues?

E.g., An Economic Development Officer whose role is dedicated to growing the agricultural sector.

	No staff	Less than 1 full-time staff	1 full-time staff	2-3 full-time staff	4 or more full-time staff	Not sure	This department does not exist
Tourism	☐	☐	☐	☐	☐	☐	☐
Economic Development	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

Which other departments have staff dedicated to agricultural and agri-food related issues?

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐
Agricultural strategy	☐	☐	☐	☐	☐
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

For any of the above initiatives to which you answered no, have staff taken steps to bring these forward to council in the past?

How would you rate your municipality's capacity to respond to and support the agri-food system?

Limited capacity - we frequently need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Some capacity - we sometimes need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Adequate capacity - we rarely or never need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Do you have any other comments about agriculture in your community that you would like to note?

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Appendix B2 - Planner Survey Questionnaire (Lower-tier municipalities)

Consent



SCHOOL OF
**ENVIRONMENTAL DESIGN
AND RURAL DEVELOPMENT**

Assessing the Capacity of Municipalities to Respond to and Support Agri-food Systems in Ontario

Planning Services Survey

This letter is an invitation to participate in a research project being conducted by Dr. Wayne Caldwell from the School of Environmental Design and Rural Development at the University of Guelph. This project is sponsored by the Ontario Agri-Food Innovation Alliance, a partnership between the Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph. This project seeks to inventory municipal and planning department capacity as it relates to agri-food priorities and issues. The research area includes all upper-, single-, and lower-tier municipalities and aims to have representation from both Northern and Southern Ontario. The following text provides more information about the project, how the collected data will be used, and the benefits of participating.

Project background

A vibrant agricultural sector in Ontario is dependent upon a knowledgeable and supportive municipal sector. With the evolving nature of municipal government and agriculture, it is important that municipalities have the capacity (staff, time, expertise) to respond to new and emerging agricultural issues (climate change, new farming practices, agritourism, etc.). It is equally important that municipal elected officials understand the needs of agriculture and are well positioned to make timely, relevant decisions in support of the agri-food sector and the economy of rural Ontario.

Research methods

This study includes three different types of data collection that will be considered in conjunction with a review of municipal documents (e.g., official plans, budgets, etc.):

- A survey sent to elected officials,
- A survey sent to the most senior planner at each municipality, and
- A semi-structured interview with a member of the planning department (upper- and single-tier municipalities).

All upper-, single-, and lower-tier municipalities in Ontario will be contacted to evaluate their capacity to support the agri-food industry and respond to evolving agricultural issues.

Your participation

Participation in this research project is voluntary. *If you are able to participate* we ask that you complete this survey. **The survey takes approximately 10-15 minutes to complete and is a combination of multiple choice and written responses (full sentences or point form is appropriate).** The survey will ask questions related to staff and budgetary capacity, agricultural knowledge, resources used, and agri-food activities in your municipality. *If you are unable to participate* we ask that you reply to our email letting us know and if possible recommending another individual in a similar role that we could contact.

We are looking for municipalities to include as a case study in this project; if you are interested in being involved in this process please contact a member of the research team to let us know. The case study will require an interview to advance discussions on this topic. Interviews will be conducted remotely by phone or Zoom.

Anonymity and confidentiality

Identity and contact related information (name, email, phone number) of participants will only be used for the administrative purposes and will be kept until five years after the study has been completed (April 30, 2029). Your name will not appear in any research or report resulting from this project. That being said, please only share information that you would be comfortable with becoming public as your identity may be inferred either by your position and/or geographic information. Confidentiality cannot be guaranteed while data are in transit over the internet. Anonymized quotations may be used. The anticipated risks to you as a participant in this project are very low but may include minimal psychological, social, economic and privacy related risks.

You can stop the survey at any time or skip a question if you do not feel comfortable answering it.

Additionally, you are able to withdraw or alter your response until December 31, 2023. If you wish to revise or withdraw your response to this survey, please contact one of the research team members.

This project has been reviewed by the Research Ethics Board for compliance with federal guidelines for research involving human participants. If you have questions regarding your rights and welfare as a research participant in this study (REB#20-04-013), please contact: Manager, Research Ethics; University of Guelph; reb@uoguelph.ca; (519) 824-4120 (ext. 56606).

Benefits

The deliverable of this project is a report for OMAFRA detailing the research findings and providing recommendations for how to better position municipalities to respond to and support agriculture and agri-food in the planning process. This report will be made available to all participants and will provide an overview of municipal capacity as well as recommendations for best practices when dealing with agricultural issues. It is also anticipated that findings will be presented in non-academic journals such as Municipal World and at conferences such as the Association of Collegiate Planning Schools annual conference. It is our intent that the findings will be of benefit to you and other municipalities across Ontario when dealing with agricultural and agri-food issues. Please let one of the research team members know if you are interested in receiving a copy of the final report.

We are looking forward to speaking with you and thank you in advance for your assistance.

Sincerely,

Natasha Gaudio Harrison, Shanley Weston, and Regan Zink

Graduate Research Assistants, Rural Planning and Development Program School of Environmental Design and Rural Development, University of Guelph

Supervisor: Dr. Wayne Caldwell

Wayne Caldwell: wcaldwel@uoguelph.ca

Natasha Gaudio Harrison: ngaudioh@uoguelph.ca

Shanley Weston: westons@uoguelph.ca

Regan Zink: zinkr@uoguelph.ca

A copy of this letter is available by emailing any of the researchers listed above. We thank you for your time and participation in this research project.

To acknowledge your rights as a participant and begin the survey, please click on the 'Next' button below.

About Your Municipality + Conditional Questions

Which municipality do you work for? Please include the full name of your municipality (e.g., City of Waterloo, Township of Wainfleet).

If you work for more than one lower-tier municipality please select the one you are most comfortable speaking about, or complete this survey for each municipality separately.

Which of the following best describes your municipality's delivery of planning service?

Planning is its own department

Planning is included as part of a larger department

The municipality does not have an internal planning department nor does it employ planning staff (this includes if planning services are provided by the County or Region)

Which department is planning services a part of?

Planning Department

When was the planning department established?

Pre 1950s

1950-1959

1960-1969

1970-1979

1980-1989

1990-1999

2000-2009

Post 2010

Not sure

In the planning department, how many of the following staff types are there?

Please provide the full-time equivalent for each staff type. (Please enter a value in each of the fields below.)

Planners:

Support staff:

Other (you will have the opportunity to explain in the next question):

Who have you included in the "Other" category of staff? (e.g., economic development staff, agronomist, forestry professional)

How many staff in the planning department are RPP or candidate members? (Please enter a value in each of the fields below.)

RPP:

Candidate:

What is the approximate annual budget of the planning department? Please also comment if the budget fluctuates significantly year-to-year.

Can you provide any insight as to why the annual budget fluctuates significantly from year-to-year?

Does your planning department ever use the services of a planning consultant?

Never - The planning department never uses the services of consultants

Rarely - The planning department retains the services of a consultants less than once a year for special cases, or during periods of staff turnover

Sometimes - The planning department retains the services of a consultants on occasion, 2-3 times a year

Often - The planning department retains the services of consultants on a monthly basis

Always - All municipal planning activities are supported by the services of consultants

What types of activities are consultants retained for? (e.g., official plans, strategic planning, providing additional support on development review, etc.)

Planning Department - Focusing on Agri-food Systems

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important Slightly important Moderately important Very important Extremely important

How frequently does the planning department deal with agriculture and agri-food related issues?

Almost never A few times a year On a monthly basis On a weekly basis On a daily basis

How many staff within the following departments (full-time equivalent) are **substantially dedicated** to agricultural and agri-food related issues?

E.g., A development planner assigned to a jurisdiction composed of primarily prime agricultural land, a policy planner dedicated to agricultural policy, an Economic Development Officer whose role is dedicated to growing the agricultural sector.

	No staff	Less than 1 full-time staff	1 full-time staff	2-3 full-time staff	4 or more full-time staff	Not sure	This department does not exist
Planning	☐	☐	☐	☐	☐	☐	☐
Tourism	☐	☐	☐	☐	☐	☐	☐
Economic Development	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

Which other departments have staff dedicated to agricultural and agri-food related issues?

To your knowledge, what is the background of staff within the planning department? (Select all that apply for at least one staff.)

Staff have post secondary education related to agriculture and rural studies

Staff work or have worked in agribusiness

Staff own (or previously owned) a hobby farm

Staff own (or previously owned) a farm

Staff currently farm

Staff have family members who farm

Staff grew up on a farm or had a part-time job when they were younger on a farm

Staff grew up in a primarily agricultural or related area

Staff learned about agricultural issues through on the job training

Staff are personally interested in agriculture

Staff have limited background in agriculture

Other (please provide a description below)

In total, how many planning staff have a background in agriculture?

The following four policies/practices are relevant to planning for agriculture in Ontario.
How knowledgeable is the planning department about the following:

(Select the name to open information about the initiative in a new window).

	We have no knowledge of this on staff	We have some knowledge of this on staff	We have expertise on staff
Minimum Distance Separation (MDS)	☐	☐	☐
The agriculture system approach	☐	☐	☐
Farming and Food Production Protection Act (FFPPA) (Normal farm practices)	☐	☐	☐
Agricultural impact assessments	☐	☐	☐

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐
Agricultural strategy	☐	☐	☐	☐	☐

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

For any of the above initiatives to which you answered no, have staff taken steps to bring these forward to council in the past?

How would you rate your municipality's capacity to respond to and support the agri-food system?

Limited capacity - we frequently need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Some capacity - we sometimes need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Adequate capacity - we rarely or never need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Do you have any other comments about agriculture in your community that you would like to note?

Contact Information and Follow-up Interview

As part of our research we will be selecting case studies to exemplify agricultural topics in Ontario. If you are interested in participating, please provide your contact information below.

Name

Position/Role

Email

Phone

Is there anyone else from your municipality (e.g. a different department, committee representative) who you think we should also talk to about agricultural planning and development? If so, please provide their contact information below.

Name

Position/Role

Email

Phone number

Planning Staff

When did your municipality first provide in-house planning services?

Pre 1950s

1950-1959

1960-1969

1970-1979

1980-1989

1990-1999

2000-2009

Post 2010

Not sure

How many staff are involved in providing planning services? (Please enter a value in each of the fields below.)

Planners:

Support staff:

Other (you will have the opportunity to explain in the next question):

Who have you included in the "Other" category of staff (e.g., economic development staff, agronomist, forestry professional)?

How many planning staff are RPP or candidate members? (Please enter a value in each of the fields below.)

RPP:

Candidate:

What is the approximate annual budget for planning services? Please also comment if the budget fluctuates significantly year-to-year.

Does your municipality ever use the services of a planning consultant?

Never - The municipality never uses the services of consultants to provide planning services

Rarely - The municipality retains the services of a consultants less than once a year for special cases, or during periods of staff turnover

Sometimes - The planning department retains the services of a consultants on occasion, 2-3 times a year

Often - The planning department retains the services of consultants on a monthly basis

Always - All municipal planning activities are supported by the services of consultants

What types of activities are consultants retained for? (e.g., official plans, strategic planning, providing additional support on development review, etc.)

Planning Staff - Focusing on Agri-food Systems

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important Slightly important Moderately important Very important Extremely important

How frequently do planning staff deal with agriculture and agri-food related issues?

Almost never A few times a year On a monthly basis On a weekly basis On a daily basis

How many staff within the following departments (full-time equivalent) are **substantially dedicated** to agricultural and agri-food related issues?

E.g., A development planner assigned to a jurisdiction composed of primarily prime

agricultural land, a policy planner dedicated to agricultural policy, an Economic Development Officer whose role is dedicated to growing the agricultural sector.

	No staff	Less than 1 full-time staff	1 full-time staff	2-3 full-time staff	4 or more full-time staff	Not sure	This department does not exist
Planning	☐	☐	☐	☐	☐	☐	☐
Tourism	☐	☐	☐	☐	☐	☐	☐
Economic Development	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

Which other departments have staff dedicated to agricultural and agri-food related issues?

To your knowledge, what is the background of planning staff? (Select all that apply for at least one staff.)

Staff have post secondary education related to agriculture and rural studies

Staff work or have worked in agribusiness

Staff own (or previously owned) a hobby farm

Staff own (or previously owned) a farm

Staff currently farm

Staff have family members who farm

Staff grew up on a farm or had a part-time job when they were younger on a farm

Staff grew up in a primarily agricultural or related area

Staff learned about agricultural issues through on the job training

Staff are personally interested in agriculture

Staff have limited background in agriculture

Other (please provide a description below)

To your knowledge, what is the background of planning staff? (Select all that apply for at least one staff.)

- Staff have post secondary education related to agriculture and rural studies
- Staff work or have worked in agribusiness
- Staff own (or previously owned) a hobby farm
- Staff own (or previously owned) a farm
- Staff currently farm
- Staff have family members who farm
- Staff grew up on a farm or had a part-time job when they were younger on a farm
- Staff grew up in a primarily agricultural or related area
- Staff learned about agricultural issues through on the job training
- Staff are personally interested in agriculture
- Staff have limited background in agriculture

Other (please provide a description below)

In total, how many planning staff have a background in agriculture?

The following four policies/practices are relevant to planning for agriculture in Ontario. How knowledgeable are planning staff about the following:

(Select the name to open information about the initiative in a new window).

	We have no knowledge of this on staff	We have some knowledge of this on staff	We have expertise on staff
Minimum Distance Separation (MDS)	☐	☐	☐
The agriculture system approach	☐	☐	☐

	We have no knowledge of this on staff	We have some knowledge of this on staff	We have expertise on staff
Farming and Food Production Protection Act (FFPPA) (Normal farm practices)	☐	☐	☐
Agricultural impact assessments	☐	☐	☐

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐
Agricultural strategy	☐	☐	☐	☐	☐
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

For any of the above initiatives to which you answered no, have staff taken steps to bring these forward to council in the past?



How would you rate your municipality's capacity to respond to and support the agri-food system?

Limited capacity - we frequently need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Some capacity - we sometimes need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Adequate capacity - we rarely or never need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Do you have any other comments about agriculture in your community that you would like to note?



No Planning Department

How are planning services provided in your municipality? (Select all that apply)

We rely on consultants to provide planning services

We have a staff member who provides planning support

Planning services are provided at a regional or district level

Other

Please explain how planning services are provided in your municipality.

If applicable, what types of activities are consultants retained for? (e.g., development review, official plans, strategic planning, etc.)

What is the approximate annual budget for planning services? Please also comment if the budget fluctuates significantly year-to-year.

No Planning Department - Focusing on Agri-food Systems

From your perspective, how important is the agricultural sector as a contributor to your jurisdiction's local economy?

Not at all important Slightly important Moderately important Very important Extremely important

How frequently does the municipality deal with agriculture and agri-food related issues?

Almost never A few times a year On a monthly basis On a weekly basis On a daily basis

How many staff within the following departments (full-time equivalent) are **substantially dedicated** to agricultural and agri-food related issues?

E.g., An Economic Development Officer whose role is dedicated to growing the agricultural sector.

	No staff	Less than 1 full-time staff	1 full-time staff	2-3 full-time staff	4 or more full-time staff	Not sure	This department does not exist
Tourism	☐	☐	☐	☐	☐	☐	☐
Economic Development	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐

Which other departments have staff dedicated to agricultural and agri-food related issues?

Does your municipality have/deliver any of the following:

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Agricultural advisory committee	☐	☐	☐	☐	☐
Agricultural strategy	☐	☐	☐	☐	☐
Climate change strategy	☐	☐	☐	☐	☐
Biodiversity strategy	☐	☐	☐	☐	☐
Water quality programs	☐	☐	☐	☐	☐
Food strategies	☐	☐	☐	☐	☐
Buy local programs	☐	☐	☐	☐	☐
Agritourism/food and farm tours	☐	☐	☐	☐	☐
Agricultural workforce development/labour initiatives	☐	☐	☐	☐	☐

	Yes	No	In Progress (Steps being made to implement)	Planned (Adopted as a direction but has not yet proceeded)	Not sure
Economic Development initiatives related to growing/supporting the agricultural sector	☐	☐	☐	☐	☐

For any of the above initiatives to which you answered no, have staff taken steps to bring these forward to council in the past?

How would you rate your municipality's capacity to respond to and support the agri-food system?

Limited capacity - we frequently need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Some capacity - we sometimes need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Adequate capacity - we rarely or never need outside or additional expertise when agricultural issues come up (Agricultural Advisory Committee, OMAFRA, consultants, etc.)

Do you have any other comments about agriculture in your community that you would like to note?

Appendix C1 - Planner Semi-structured Interview Guide (Planner on staff)

Planner semi-structured interview

Intro and learning about agriculture issues

- 1. How many years (in total) have you worked in the planning field?**
 - a. How long have you been employed by [insert name of municipality]?
 - b. Can you tell me more about your role in the planning department?
 - c. Do you ever deal with agricultural issues? What about urban agricultural issues?
- 2. Can you tell me about agriculture in your municipality?**
 - a. Is there anything that stands out in relation to agriculture and agri-food?
 - b. How has agricultural activity changed over the years?
 - i. Has climate change (Covid-19, world events, etc.) impacted agricultural activity in your municipality?

Planning department structure, budget, and capacity

- 3. Can you tell me a little bit more about the planning department structure?**
 - a. Does the planning department work with economic development or other departments (e.g., engineering, building department, tourism) on agriculture or agri-food issues?
 - i. If yes, what is that relationship like? Has this changed over the years?
 - ii. If yes, what value is this for agriculture and agri-food related issues?
 - b. In the survey, you indicated that there are staff substantially dedicated to agricultural and agri-food related issues, can you elaborate on how this informs the work of the planning department? (*Follow up to PD11 and PS11*)
 - i. Do any of the planners have expertise in agriculture or agri-food systems? (*Follow up to PD13 and PS13*).
 1. What is their background in agriculture?
- 4. I want to ask about the planning department budget. Can you tell me a little bit more about how planning department budget priorities are set? How are funds allocated within the planning department?**
 - a. How does the planning department fund special initiatives (if any)?

- i. Are you aware of any funding opportunities for agricultural initiatives available to municipalities? If yes, what are they and have you taken advantage of them? (e.g., Canada Climate Action Funds, RED). Are there any other ways your municipality accesses funding? (e.g., partnerships with community groups/NGOs/research groups)

Agri-food programs, policies, and plans

5. **Can you tell me about some of the initiatives in your municipality related to agri-food systems?** (this could include specific policies or plans, agricultural strategies, biodiversity strategies, water quality programs, buy local programs, etc.) (*Follow up to PD15 and PS15*)
 - a. Has council always supported these types of initiatives? OR why not?
 - b. Were any of these initiatives developed in collaboration with another level or government or organization? (e.g., Lower-tier, Community Futures, conservation authorities, etc.)
 - c. To your knowledge, does your municipality's economic development strategy include any initiatives (for example, first-generation farmers, indigenous food systems, specialty crop areas) to grow/support the agriculture/agri-food sector? What are they?
6. **Has climate change (realities, policies, best practices, etc.) affected planning in relation to agriculture?** If so, how?
7. **Is there an agricultural issue that is particularly prevalent across your municipality?** Or has there been a single case that was particularly contentious/ unique to deal with? Could you share a little about that process?
 - a. What types of agriculture-related proposals have you seen?
 - b. What types of proposals have you seen that aren't agriculture-related, but have an impact on the sector?
8. **Has your municipality required or received any agricultural impact assessments?**
 - a. If yes, are there any challenges with understanding/ responding to AIAs? Is this something you have capacity for in-house?

9. In the survey you indicated X regarding the municipalities capacity to respond to and support the agri-food system, can you tell me a bit more about why you responded that way? (Follow up to PD16, PS16)

- a. What are the barriers or hurdles in responding to agri-food related issues? This could include political interests if relevant.
- b. What resources does the planning department use when faced with an agricultural issue that they are unsure about? (e.g. planning consultants, agricultural advisory committee, consultant, upper tier, provincial government/OMAFRA, conservation authority, Ontario Federation of Agriculture, local agricultural associations, etc.)

Best practices and final remarks

10. What best practices are currently employed to help planning departments respond to agricultural issues?

- a. **How does the planning department stay up to date on agricultural and agri-food issues, priorities, and policies?** (e.g., OPPI events, OMAFRA, Golden Horseshoe Food and Farming Alliance, Greenbelt Foundation, other?).

11. What could help the planning department respond to agricultural and rural issues? (e.g., Mandatory training, additional training and workshop opportunities, farm visits, access to tools (e.g., guides, reports), increased staff capacity, newsletter updates about the agricultural sector, attendance at events (e.g., farm tours, conferences, workshops that may be hosted by the agricultural advisory committee, OPPI, Ontario Farmland Trust, Friends of the Greenbelt, Greater Toronto Area Agricultural Action Committee, etc.)

- a. We are working to develop materials regarding planning for agriculture. Is there anything specific you would like to see included?

12. Do you have any other comments about agriculture in your community that you would like to note?

13. As part of our research we will be selecting case studies to exemplify agricultural issues in Ontario. Are you okay with being contacted with additional questions?

Appendix C2 - Planner Semi-structured Interview Guide (No planner on staff)

North/No Planner semi-structured interview

Intro and learning about how planning services are provided

- 1. How many years (in total) have you worked in [insert name of municipality]?**
 - a. Can you tell me a little bit more about your role?
 - a. Do you ever deal with agricultural issues?
- 2. Can you tell me about agriculture in your municipality?**
 - a. Is there anything that stands out in relation to agriculture and agri-food?
 - b. How has agricultural activity changed over the years?
 - i. Has climate change (Covid-19, world events, etc.) impacted agricultural activity in your municipality?

Planning services, budget, and capacity

- 3. Can you tell me a little bit more about how planning services are provided?**
 - a. If consulting services are used is it always the same consultant?
 - b. Was there ever a planner on staff?
 - i. If no, do you know why there isn't/maybe has never been a planner on staff?
 - c. Has there ever been a discussion about providing in-house planning services?
- 4. Beyond planning, are there any staff specifically allocated to agricultural issues? (Follow up to NP8)**
 - a. If yes, what is their background in agriculture? Are they involved in any planning activities?
- 5. I want to ask about the planning budget and possible funding opportunities. Can you tell me a little bit more about how planning department budget priorities are set? How are funds allocated within the planning department?**
 - a. How does the municipality fund special initiatives related to the agri-food sector (if any)?
 - i. Are you aware of any funding opportunities for agricultural initiatives available to municipalities? If yes, what are they and have you taken advantage of them? (e.g., Canada Climate Action Funds, RED). Are there

any other ways your municipality accesses funding? (e.g., partnerships with community groups/NGOs/research groups)

Agri-food programs, policies, and plans

- 6. Can you tell me about some of the initiatives in your municipality related to agri-food systems?** (this could include specific policies or plans, agricultural strategies, biodiversity strategies, water quality programs, buy local programs, etc.) *(Follow up to NP10)*
 - a. Has council always supported these types of initiatives? OR why not?
 - b. Were any of these initiatives developed in collaboration with another level or government or organization? (e.g., Lower-tier, Community Futures, conservation authorities, etc.)
 - c. To your knowledge, does your municipality's economic development strategy include any initiatives (for example, first-generation farmers, indigenous food systems, specialty crop areas) to grow/support the agriculture/agri-food sector? What are they?
- 7. Is there an agricultural issue that is particularly prevalent across your municipality?** Or has there been a single case that was particularly contentious/ unique to deal with? Could you share a little about that process?
 - a. What types of agriculture-related proposals have you seen?
 - b. What types of proposals have you seen that aren't agriculture-related, but have an impact on the sector?
- 8. Has climate change (realities, policies, best practices, etc.) affected planning in relation to agriculture?** If so, how?
- 9. Has your municipality required or received any agricultural impact assessments?**
 - a. If yes, are there any challenges with understanding/ responding to AIAs?
- 10. In the survey you indicated X regarding the municipalities capacity to respond to and support the agri-food system, can you tell me a bit more about why you responded that way? *(Follow up to NP11)***
 - a. What are the barriers or hurdles in responding to agri-food related issues? This could include political interests if relevant.

- b. What resources does the municipality use when faced with an agricultural issue that they are unsure about? (e.g. planning consultants, agricultural advisory committee, consultant, upper tier, provincial government/OMAFRA, conservation authority, Ontario Federation of Agriculture, local agricultural associations, etc.)

Best practices and final remarks

11. What could help your municipality respond to agricultural and rural issues? (E.g., Mandatory training, additional training and workshop opportunities, farm visits, access to tools (e.g. guides, reports), increased staff capacity, newsletter updates about the agricultural sector, attendance at events (e.g., farm tours, conferences, workshops that may be hosted by the agricultural advisory committee, OPPI, Ontario Farmland Trust, Friends of the Greenbelt, Greater Toronto Area Agricultural Action Committee, etc.)

- a. We are working to develop materials regarding planning for agriculture. Is there anything specific you would like to see included?

12. Do you have any other comments about agriculture in your community that you would like to note?

13. As part of our research we will be selecting case studies to exemplify agricultural issues in Ontario. Are you okay with being contacted with additional questions?

Appendix D - REB Approval

APPROVAL PERIOD: June 26, 2020
EXPIRY DATE: June 25, 2024
REB: G
REB NUMBER: 20-04-013
TYPE OF REVIEW: Delegated
PRINCIPAL INVESTIGATOR: Caldwell, Wayne (wcaldwel@uoguelph.ca)
DEPARTMENT: School of Environmental Design & Rural Development
SPONSOR(S): Friends of the Greenbelt Foundation Ontario Agri-Food
Innovation Alliance
TITLE OF PROJECT: Agriculture and Municipal Capacity

CHANGES:

Type	Date
Annual renewal	June 9, 2023

The members of the University of Guelph Research Ethics Board have examined the protocol which describes the participation of the human participants in the above-named research project and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement, 2nd Edition.

The REB requires that researchers:

- Adhere to the protocol as last reviewed and **approved** by the REB.
- Receive approval from the REB for any **modifications** before they can be implemented.
- Report any **change in the source of funding**.
- Report **unexpected events or incidental findings** to the REB as soon as possible with an indication of how these events affect, in the view of the Principal Investigator, the safety of the participants, and the continuation of the protocol.
- Are responsible for **ascertaining and complying with all applicable legal and regulatory requirements** with respect to consent and the protection of privacy of participants in the jurisdiction of the research project.

The Principal Investigator must:

- Ensure that the ethical guidelines and approvals of facilities or institutions involved in the research are obtained and filed with the REB prior to the initiation of any research protocols.
- Submit an **Annual Renewal** to the REB upon completion of the project. If the research is a multi-year project, a status report must be submitted annually prior to the expiry date. Failure to submit an annual status report will lead to your study being suspended and potentially terminated.

The approval for this protocol terminates on the **EXPIRY DATE**, or the term of your appointment or employment at the University of Guelph whichever comes first.

Signature:

Date: June 12, 2023



Dave Guyadeen
Co-Chair, Research Ethics Board-General

Appendix E - Published Conference Proceeding

LOCAL AGRI-FOOD SYSTEMS AS A MUNICIPAL PRIORITY: CONSIDERING THE ROLE, APPROACH AND CAPACITY OF MUNICIPAL PLANNING DEPARTMENTS

REGAN ZINK, WAYNE CALDWELL & SARA EPP

School of Environmental Design and Rural Development, University of Guelph, Canada

ABSTRACT

In a context of increasing volatility and instability, agriculture and local agri-food systems are critical to local and regional resilience. In Canada, agriculture is both a federal and provincial responsibility, however municipalities are the most local level of government responsible for land use decisions. While some guidance is provided by the provincial government, municipal planning departments play a critical role in creating, implementing, and enforcing policies, programs, and initiatives related to agriculture and agri-food systems. Municipalities are also responsible for implementing provincial guidance and directives, and are key players in ensuring consistency and farm viability across the province. However, little is known about the capacity of municipal planning departments and their role and approach to supporting agriculture. This paper looks to examine the role and approach of municipal planning departments in agri-food systems in Ontario. Academic literature on the topic was coded for 10 possible roles adopted from earlier publications looking at the intersection of planning and food systems. Findings are interwoven with interview and survey data regarding the capacity of municipal planning departments in Ontario's Greenbelt region to support agri-food systems. While this paper provides insight into the role of municipal planning departments in agri-food systems in Ontario, further research should investigate the capacity of municipal planning departments to carry out these roles.

Keywords: *municipal capacity, planning, food systems planning, agriculture, agri-food systems, Ontario.*

1 INTRODUCTION

In North America, the discussion about food systems as part of the planning portfolio can be traced back to the early 2000s. Pothukuchi and Kaufman [1], [2] were among the first to address the absence of food systems from planning practice. At that time, community food security was the primary driver behind Pothukuchi and Kaufman's work which revealed that few planners in America viewed food systems as part of the planning portfolio and, more concerningly, that few planners perceived "food system issues to be particularly problematic" [1]–[3, p. 5].

Since then, the field of food system planning, also referred to as community food planning [4], has continued to grow [3], [5]–[10]. Food system planning emerged as a space where scholars, planners, decision-makers, activists, economic development and public health professionals could work together to address sustainable development through the lens of food systems [4], [7], [11], [12]. Food systems planning encompasses a variety of planning priorities, including: the impacts of urban sprawl, economic development, public health, community vitality and development, sense of place, and environmental sustainability.

It is important to acknowledge that "agriculture" has a slightly different trajectory in planning discourse and was incorporated into the planning portfolio slightly earlier than other food systems components. As early as the 1950s there was concern about the impacts of urbanization on agricultural and specialty-crop lands [13]. Caldwell et al. [13] trace planning for agriculture, and more specifically farmland conservation, back to the 1970s in Ontario. In fact, Thibert argues that "food production and food self-reliance are not new topics" in planning, pointing to Ebenezer Howard's "Garden City" and the Victory Gardens movement



as earlier occurrences of food systems in planning [3, p. 2]. Food systems planning, as emerged in the early 2000s, is inclusive of agricultural planning.

1.1 Land-use planning in Ontario

In looking to understand the role of municipal planning departments in agri-food systems in the Province of Ontario it is helpful to understand the legislative framework. Under Canada's federal system of government, land-use planning is considered a provincial responsibility [14]–[16]. Unlike the United States, the Canadian constitution does not recognize private property rights in the same way and as a result provincial governments in Canada have a strong authority over land-use planning matters [14].

In Ontario, the provincial government transfers the responsibility of administering and regulating land-use planning to municipalities [15]. As part of this, the province provides a number of policies and guidelines that municipalities must comply with when implementing land-use planning at the local level [17]. The Ministry of Municipal Affairs and Housing is the provincial ministry responsible for planning policy [15]. However, other ministries such as the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR) also provide guidance on matters related to land-use planning [15].

In Ontario there are over 400 municipalities, including upper-, single-, and lower-tier municipal governments [18]. Wegener et al. distinguish between regional (upper-tier) municipalities, who are responsible for “matters of regional importance and scale (e.g., regional land use planning, public health, transit)”, and area (lower-tier) municipalities, who are responsible for “all other matters of community or neighbourhood character” (e.g., zoning, community land-use planning, development review, etc.) [17, p. 7]. Single-tier municipal governments are a hybrid of the two. In all cases, municipal planning departments are responsible for balancing provincial directives and local needs.

The purpose of this paper is to examine the role of municipal planning departments in agri-food systems in Ontario. Academic literature on the topic was coded for 10 possible roles adopted from earlier publications looking at the intersection of planning and food systems [19], [20]. Findings are interwoven with interview and survey data regarding the capacity of municipal planning departments in Ontario's Greenbelt region to support agri-food systems.

2 LITERATURE REVIEW: APPROACH

There are a number of roles that municipal planning departments could or should play in supporting and enhancing local and regional agri-food systems. Two key publications in food systems planning were particularly helpful in identifying the possible roles of municipal planning departments in Ontario. The first publication considered was the American Planning Association Planning Advisory Service Report, titled “A Planners Guide to Community and Regional Food Planning: Transforming Food Environments, Facilitating Healthy Eating” written by Raja et al. in 2008 [19]. This resource identified a number of potential strategies for municipal planning departments looking to improve food systems, including “(1) information generation, (2) program implementations, (3) facilitation and coordination, (4) plan making and design, and (5) zoning and regulatory reform” [19, p. 30]. Within these strategies more specific subcategories are elaborated. Of note, Raja et al. make the distinction between facilitation and coordination “between local government agencies and departments” and “between stakeholders of a food system” [19, pp. 31–32].

The second publication considered was “Local Food System Planning: The Problem, Conceptual Issues, and Policy Tools for Local Government Planners” written by Buchan et al. in 2015 [20]. This article looks to understand the roles and tools municipal governments use in addressing food systems in the North American context. Buchan et al. identify four broad roles that planning can play, including “(1) provide resources (e.g., financial, in-kind, and information), (2) undertake projects and programs (e.g., community gardens, local procurement), (3) advocate and facilitate, and (4) regulate and establish policy” [20, p. 11].

In addition to the roles identified by Raja et al. [19] and Buchan et al. [20], there are a number of roles that emerged from the academic literature. For this paper, 27 articles specific to municipal planning and agri-food systems in Ontario were reviewed and the roles of municipal planning departments coded. The final codes included for the role of municipal planning departments were based on these two publications [19], [20], in addition to roles which emerged from the articles themselves. This is what Gough et al. refer to as mixed coding and is both inductive and deductive in nature [21, pp. 148–149].

The final list of codes for the role of municipal planning departments include:

- Regulation and policy reform;
- Coordination and facilitation – General;
- Coordination and facilitation – Community and food systems stakeholders;
- Creating space, empowering, and listening;
- Projects and programming;
- Leadership and politics;
- Information generation and dissemination;
- Monitoring and evaluation;
- Challenge planning culture/tradition; and
- Plan making and design.

3 THE ROLE OF PLANNING IN AGRI-FOOD SYSTEMS IN ONTARIO

There are no academic peer-reviewed journal articles that specifically define, list, and discuss the roles of municipal planning in agri-food systems in Ontario. That being said, there are a number of relevant articles that discuss the relationship between the two. For example, Wegener et al. [17] recognize a variety of activities that municipal planning departments can support including: facilitating cooperation and partnership among food systems stakeholders (including civil society and all levels of government), recognizing agriculture as an urban land use through the official plan and zoning bylaw, supporting local agricultural producers (specifically fruit and vegetable producers), and adopting a food systems planning approach to better plan for future farming and food production. Similarly, Hayhurst et al. discuss initiatives that municipalities can undertake to foster urban agriculture, including: “land-use policies, community development mechanisms, food security initiatives, and public health directives” [22, p. 7]. The following subsections briefly discuss the four most common roles for municipal planning in agri-food systems as identified in the literature and provide current examples from municipalities in the Greenbelt region of Ontario. The Greenbelt region of Ontario is depicted in Fig. 1.

3.1 Regulation and policy reform

Municipal planning in its most basic form is responsible for implementing policies that align with both Provincial policy and local needs [14], [23]. Municipal planning departments play



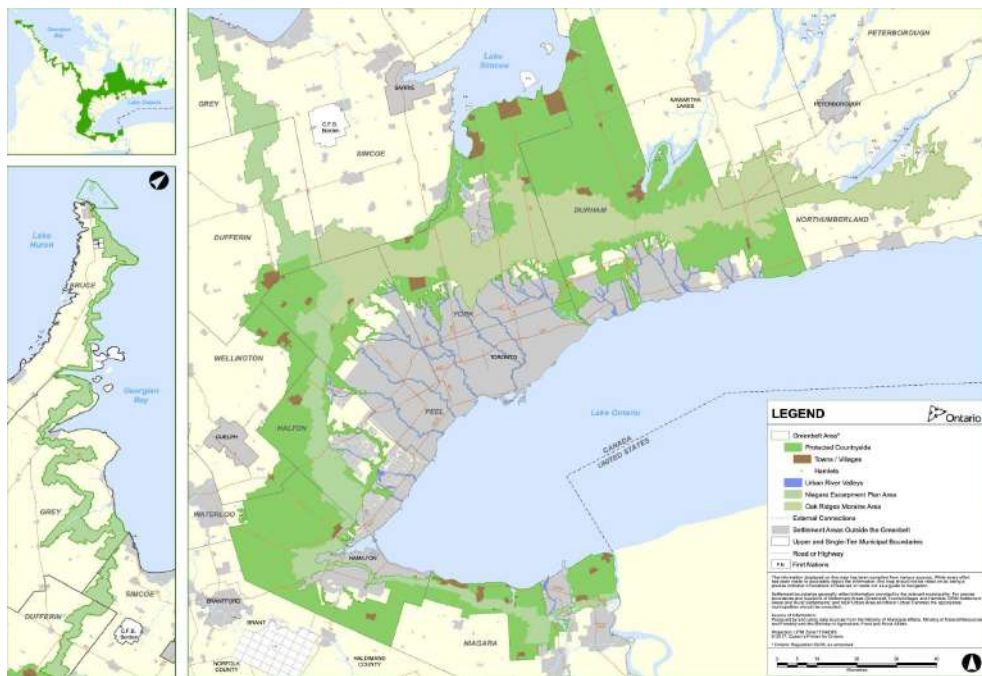


Figure 1: Map delineating the Greenbelt area [39].

an important role in amending existing land-use policy to support agri-food systems [17], [24], [25]. Policy reform should:

- reduce barriers to non-conventional forms of food production and retail [17], [25];
- encourage multifunctional agricultural practices [26];
- recognize diversity in agriculture and provide flexibility for farm parcel-size [27];
- consider mixed-use zoning as a way to encourage food retail [25];
- promote the use of vacant lands for urban agriculture [25];
- accommodate on-farm diversification [17]; and
- integrate food systems supportive and prescriptive language into the Official Plan [17], [22], [24].

However, municipalities struggle with translating general official plan policy into implementation tools such as zoning by-laws [25]. This is particularly true when official plan policies are high-level or resources are limited [25]. At the farm level, this uncertainty “makes farm planning riskier, prevents farmers’ long-term planning, and hinders farm investment” [26, p. 2].

Thibert [3], Port and Moos [28], Huang and Drescher [25], and Music et al. [8] speak specifically to the role of planning and planning policy in urban agriculture. Thibert challenges the planning concept of “highest and best use” and argues that this mindset and approach is a barrier to effective food systems planning [3, p. 5]. In this vein, Music et al. [8] call for municipalities to change their policies to allow for expanded community gardens. The policy landscape for urban agriculture is contentious and must contend with many competing priorities.

Adding to the discussion around policy reform, Waldick et al. [29] argue that climate change adds another layer of complexity to policy creation and implementation for agri-food systems. Involving relevant stakeholders as part of the planning process is essential to understanding the complexity of agri-food systems and the types of policy changes needed [24], [26], [30]. Going one step further, Blay-Palmer [11] argues that a new policy framework is needed to recognize food as being relevant to rural, peri-urban, and urban areas alike.

Looking at the Greenbelt region of Ontario, it is clear that regulation and policy reform is a key role for municipal planning departments. Planners interviewed felt that policy barriers were one of the biggest challenges to supporting agriculture and agri-food systems in their municipality. Policy barriers exist at both the municipal and provincial level as a result of outdated, overlapping and conflicting, and the creation of new policies. However, as many planners pointed out, planning departments play a key role in navigating this landscape in a way that supports the agri-food system. For example in the City of Burlington, the “Red tape, red carpet” initiative seeks to reduce policy and service barriers, including those experienced by agri-food system stakeholders. In this example an agricultural liaison role was created to assist with agricultural related planning applications and issues. More broadly across the Greenbelt region, planners talked about supporting on-farm diversification and the range of uses associated with agri-food systems.

3.2 Coordination and facilitation: General

There are a number of diverse stakeholders involved in food systems planning, including: food producers, processors, distributors, civil society, community groups, municipal departments, academic/research institutions, NGOs, and upper levels of government, among others. One of the most widely recognized roles of municipal planning is the facilitation and coordination of these stakeholders [14], [22], [25], [31]. Specific to urban agriculture, Huang and Drescher [25] argue that municipal governments should play regulating, facilitating, providing, and partnership roles.

Hayhurst et al. argue that the “diversity of stakeholders and projects, and the lack of strong centralized capacity” in food systems planning is both a strength and weakness [22, p. 11]. In this context, facilitation and coordination are needed to build trust, increase legitimacy, and strategize across all levels of government [32]. Caldwell et al. [23] and Macdonald et al. [14] similarly speak to the role of intergovernmental collaboration and territorial coordination, including partnership with neighbouring municipalities, coordination between upper- and lower-tier municipal governments, and relationship building with conservation authorities.

Agri-food systems span multiple, overlapping jurisdictions and coordination and facilitation plays an important role in promoting urban to rural linkages [22], providing financial incentives [14], [29], coordinating program delivery [29], implementing regional plans and policies [12], and supporting agri-food systems functions and public service needs [14], [22].

Interdepartmental coordination also has an important role to play in food systems planning [8], [11], [12], [17], [23], [29], [32]. More specifically, partnerships with public health [8], [11], [12], [17], [32] and economic and community development [8], [23] were recognized as strengthening agri-food systems planning activities. Coordination and facilitation in this context is important for building shared vocabulary and vision [8], [12]. These partnerships can also be used to strategically position food systems planning as part of the municipal agenda, gain support from council, coordinate policy development, and access existing partnerships with community stakeholders [12], [17], [29], [32].



In the Greenbelt, the role of municipal planning departments in coordination and facilitation was highlighted through discussion around increasing capacity. Many of the municipalities interviewed talked about the important role of collaboration. For example, in Dufferin County the planning and economic development staff for both the upper- and lower-tier governments meet regularly to discuss shared challenges and opportunities. These meetings also provide the opportunity for municipal staff to hear from provincial ministries such as the Ontario Ministry of Agriculture, Food and Rural Affairs. Similarly the planning department at Durham Region organizes an annual farm day for all municipal elected officials and staff. This initiative recognizes the important role that other municipal departments such as building, engineering, and economic development, as well as Council play in supporting agri-food systems.

3.3 Coordination and facilitation: Community and food systems stakeholders

Wekerle [33], speaks specifically to partnerships and network movements that link food systems planning to civil society (e.g., committees, task forces, and coalitions). Similarly, Caldwell [34], Van Osch [30], and Waldick et al. [29] emphasize the need for broad sectoral consultation and multi-participant planning and decision-making approaches. This type of network involvement and multi-participant planning is important for linking municipal staff as well as councils to a diversity of stakeholders, including food agencies, social justice groups, and community garden advocates [33], as well as farm community groups [14], [30], and private organizations [4], [14].

While participatory approaches were emphasized in OPPI's 2011 Call to Action titled *Healthy Communities and Planning for Food*, Planning for Food Systems in Ontario [35], Hayhurst et al. [22], argue that few municipalities in Ontario have taken a participatory approach. Akimowicz et al. suggest that this type of cooperative process in food systems planning is important to "reconciling agricultural and urban stakeholders' worldviews" [26, p. 2].

A similar sentiment was shared by many of the planners in the Greenbelt. More specifically, including farmers in the planning process was identified as one of the ways municipalities can build capacity and better support the agricultural sector. For example, Grey County talked about "going to the farmers" and scheduling public consultation around times that work for the agricultural sector. Planners from a number of municipalities also discussed the importance of learning from the farm community as well as other agri-food systems stakeholders.

3.4 Challenge planning culture/tradition

Challenging planning culture/tradition emerged as an important role for municipal planning departments. For example, Thibert argues that "[urban agriculture] policies should reflect the way [urban agriculture] is actually practiced and not the way planners think it should be practiced" [3, p. 4]. Thibert [3] also states that in the case of urban agriculture, cultural barriers are equally as significant as technical or legal barriers. A quote from Wegener et al. summarize this sentiment as "planners' tendency to act and make decisions the way planning has always been done; 'legalistic' interpretation of existing policies; narrowly defined policy language; and strict adherence to current codes and practices" [17, p. 12].

Other articles suggest that municipal planning departments should take a more holistic approach to food systems planning [4], [25], [26] and that current understanding of agriculture and agricultural activity should be broadened [15], [17], [27], [36]. Thibert adds,



“Whatever the case may be, there still seems to be a gap between what scholars think planners and municipal governments should do and what they actually do in practice” [3, p. 5]. In fact, in both Toronto [33] and Guelph [22] the involvement of academic institutions was instrumental in gaining serious attention for food systems planning from the municipal planning department.

Another example of challenging planning culture/tradition in the Ontario context is provided by Akimowicz et al. [26] and Marr et al. [15] who introduce the idea of multifunctional agriculture. Multifunctionality is an approach to agricultural planning policy that encourages positive agricultural externalities such as amenity spaces and ecosystem services [26]. This approach is referenced by both authors as being distinctly different from agricultural planning in Ontario [15], [26]. Planning policy in Ontario takes what Marr et al. [15] call a “land-sparing” approach and is centred around the division of land use. Akimowicz et al. [26] and Marr et al. [15] challenge municipal planning departments to encourage the integration of agricultural and natural environment land uses at the municipal level (e.g., clean water programs, and supporting the uptake of best management practices).

The role of planning departments in challenge planning culture/tradition was not a key theme that came out of interviews with planners in the Greenbelt. That being said, a number of municipalities support activities that encourage the integration of agricultural and natural environment land uses. For example, Wellington County’s Rural Water Quality Programme provides financial support for property improvements such as tree planting and livestock exclusion fencing. Similarly, the Municipality of Clarington runs a Trees for Rural Roads Program to increase tree cover along roadways. In a more urban setting, the City of Vaughan in York Region is working to support and promote community gardens and urban agriculture as important components of agri-food systems.

4 CONCLUSION

The involvement of municipal planning departments in food systems planning can provide a number of benefits to local agri-food systems including reducing barriers to production and processing; supporting distribution both on and off the farm; improving community and regional self-reliance; providing space for all agri-food stakeholders to be involved; and minimizing the distance from farm-to-fork [12]. Across time there seems to be a recurring sentiment that planners do not have expertise in food systems and therefore cannot, and do not, become involved in food systems planning [1]–[3]. Additionally, there is continued scepticism [3], [25], about how well food systems have been integrated into planning practice, and there is undoubtedly still a long way to go to improving governance [14], [23], [26].

This paper provides an exploration of the role of municipal planning departments in local agricultural/agri-food systems in Ontario. Ten roles for municipal planning were identified in the academic literature, including: Regulation and policy reform, Coordination and facilitation – General, Coordination and facilitation – Community and food systems stakeholders, Creating space, empowering, and listening, Projects and programming, Leadership and politics, Information generation and dissemination, Monitoring and evaluation, Challenge planning culture/tradition, Plan making and design.

These roles were highlighted in publication from a range of disciplines, representing a diversity of perspectives. Regardless of the discipline, perspective, intended outcome, or associated motivation, food systems planning seems to be premised on the idea of moving toward more sustainable food systems and sustainable regional development [4], [7], [11], [12], [28], [30], [36]. This emphasizes that the planning portfolio includes much more than just land-use planning and policy implementation, and has moved “into a more overt, non-



neutral advocacy and entrepreneurial role” [37, p. 24]. Municipal planning departments play a critical role in addressing a variety of issues to sustain the economic, social, and environmental viability of agricultural and agri-food industries [20], [23], [38].

While there are clearly a number of roles that municipal planning departments could or should play in agri-food food systems, these roles require financial and staff resources, knowledge and expertise, and the support of municipal councils. Many of the articles alluded to or discussed capacity as an important factor of food systems planning [4], [14], [22], [23], [25], [36]. While this paper provides insight into the role of municipal planning departments in agri-food systems in Ontario, further research should investigate the capacity of municipal planning departments to carry out these roles. Research by Caldwell et al. [23] reveals that planning department capacity in the Greenbelt region of Ontario is varied. Further research is needed to understand how planning department capacity impacts food systems planning.

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Appendix F - Original Qualifying Exam (submitted July 3, 2023)

Municipal Agri-food System Planning Capacity

Qualifying Examination

Prepared by: Regan Zink

Date: Spring 2023

Page count: 43

Word count: 11,350

Land Acknowledgment

The entirety of Canada resides on traditional, unceded and/or treaty lands of Inuit, Métis and First Nations peoples. Planners are operating in a role that is deeply entrenched in legacies of imperialism and colonization (OPPI, 2019). It is my responsibility as a planning scholar to make time to learn more about the original inhabitants of Canada, the treaties that exist, and our role in addressing the 94 Calls to Action of the Truth and Reconciliation Commission of Canada.

I currently reside in Guelph, Ontario, on lands between the Lakes Treaty Number 3 territory and the territory of the Mississaugas of the Credit. I am not First Nations, Métis or Inuit, rather I came to be on Turtle Island as a result of settler-colonial histories. I want to recognize the long-standing and on-going relationship of Anishinnabe and Hodinöhsö:ni' peoples with the land and each other in this area. I have gratitude for all of the people who lived in harmony with the land before me and those who continue to do so today. As a settler on this land, I have a responsibility to participate in a journey of learning and recognize the importance of stewardship in cultivating our shared place on Turtle Island.

The Dish with One Spoon wampum is an agreement between Hodinöhsö:ni', Anishinaabeg and their allied nations in the Great Lakes Region. This wampum indicates that collectively we have one dish and what belongs to one will be shared among all. I believe this is particularly relevant to agri-food systems planning and the responsibility we have to take care of the land, as what we have should be shared both now and in the future.

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The purpose of this qualifying examination paper

As part of the University of Guelph, School of Environmental Design and Rural Development, Rural Studies PhD program, students are required to prepare a Qualifying Examination (QE) which includes both a written and oral component. This paper was prepared to fulfill the written requirement of my QE. It is expected that the QE addresses at least two bodies of knowledge.

The bodies of knowledge addressed in this paper include agri-food systems planning and capacity (as it relates to municipal planning). Planning is a diverse field of study that overlaps and bleeds into adjacent disciplines (Alexander, 1992). As such, literature from a range of disciplines and fields of research are included in this paper, including those from: urban/rural/regional planning, sociology, geography, food studies, and political science, among others. Furthermore, my QE will primarily lean on Northern American publications as my research interests are related to the Ontario setting. That being said, alternative perspectives and key papers from other geographics locations have been considered and included as relevant.

I also want to acknowledge that throughout this paper I have attempted to address agri-food systems planning holistically without assigning a value to different types of agri-food systems. Literature regarding agri-food systems sustainability and the transitions needed is divided and the purpose of this paper is not to argue for a singular approach (Brock, 2023). As with many “wicked” or “complex” problems, it is likely that multiple and diverse solutions are needed (Rittel & Webber, 1973). This approach is also supported by systems thinking which argues that “a diverse system with multiple pathways and redundancies is more stable and less vulnerable to external shock than a uniform system with little diversity” (Meadows, 2009, pp. 4–5).

The topics and scope of this paper were reviewed and approved by my advisory committee on April 26, 2023.

Positionality statement

Through my experiences as a graduate student and academic researcher I have become increasingly aware of the importance of documenting and discussing my positionality as a way to practice reflexivity and self-awareness (Holmes, 2020; Robinson & Wilson, 2022). My positionality statement is a way to take stock of my identity, life experiences, worldview, and relationship to the research topic and to think critically about how my position will impact my work (Holmes, 2020; Robinson & Wilson, 2022). My positionality impacts multiple aspects of my research, including my chosen topic of interest, research questions, motivations, research methods, and outcomes (Holmes, 2020). My positionality also impacts my decision-making processes, relationships, communication style, and perhaps the data that is available to me (e.g., what information are participants willing to disclose). It is also important for me to consider that my positionality has implications for how I interpret, understand, and value the work of others (Holmes, 2020; Rowe, 2014). Below I have included my working positionality statement for my doctoral research.

I am a white, able-bodied, english-speaking, middle-class woman of settler descent living in Ontario, Canada. My academic background is in Urban Planning and I have worked in both public and private sector planning roles. I am currently a full-time graduate student in the School of Environmental Design and Rural Development (SEDRD), in the Ontario Agriculture College, at the University of Guelph. My graduate studies are partially funded by the Ontario Ministry of Agriculture, Food and Rural Affairs.

Outside of academia, a large part of my personal and professional development occurred working for stakeholders along the agri-food supply chain in Ontario (family farm, grocery store, health food store,

cafe, coffee roastery). These experiences solidified my interest in agri-food systems. They also gave me the opportunity to observe how people interact with food in a variety of settings. I also want to recognize that my grandparents were livestock farmers and that both sides of my family have agricultural backgrounds. These experiences inform my understanding and value of agri-food systems.

I believe that food and agriculture are not only vital for human survival, they are ingrained in and manifestations of our culture, way of life, and connection to the natural world. I also believe there are large knowledge gaps and imbalances between people and the food and land on which we depend. I am interested in capacity building, nature-based solutions, and bottom-up forms of problem solving to address these gaps.

It's important for me to acknowledge that I understand myself to be both an insider and outsider in relation to my research area. As a planning graduate and Candidate Registered Professional Planner, I am a member of the planning profession. However, I am currently a full-time graduate student studying in a rural studies program which is not accredited by Canadian planning institutions. My membership may be questioned both because of my early career status and current role as a researcher.

Introduction to planning and agri-food systems

The planning profession interacts with and impacts local and regional agri-food systems in a variety of ways (FAO, 2019; Hansen et al., 2020; OPPI, 2011; Pothukuchi & Kaufman, 2000; Soma & Wakefield, 2011). Agri-food systems are inherently land-based, both in the sense that agri-food systems components and functions require physical space but also because agricultural production relies on the natural environment and ecosystem services (Connell et al., 2013). Agri-food systems also have important ties to economic sustainability, wellbeing and health, and community resilience (Raja et al., 2018; Sonnino et al., 2019; Trudeau et al., 2021). Planners are fundamentally concerned with all of these things (Caldwell et al., 2020; Hodgson, 2009; Pothukuchi & Kaufman, 2000).

While there is no one definition of planning, the Canadian Institute of Planners suggests that “planners safeguard the health and well-being of urban and rural communities, by addressing the use of land, resources, facilities and services with consideration to physical, economic and social efficiency” (Canadian Institute of Planners, n.d.). Put more simply, planning is interested in the sustainable management of people and land. Sustainable management in the context of planning includes the three pillars of sustainability (social, environmental, and economic) as well as inter- and intra-generational considerations (Collier et al., 2013; Lamine, 2015; Marchese et al., 2018). In practice, planning includes a number of activities (e.g., policy creation and implementation, community engagement and outreach, research, and advocacy) across multiple fields of work (e.g., land development, social planning, resource management, transportation, and economic development). These activities and fields of work intersect with agri-food systems in multiple direct (e.g., protection of prime agricultural lands, on-farm diversification) and indirect (e.g., intensification policies, social planning) ways.

Agri-food systems today

The Food and Agriculture Organization of the United Nations suggests that agri-food systems include “primary agricultural production of food and non-food products, the production of food of non-agricultural origin, the food supply chain from producer to consumer and the final consumer of food” (FAO, 2021, p. 9). Agri-food systems include the entire network of resources, people, and activities that are involved in the production, processing, distribution, storage, marketing, consumption, and disposal of food, as well as the outputs of these activities, including socio-economic and environmental impacts (LEI International Policy et al., 2018; Raja et al., 2017; Robert & Mullinix, 2022). Furthermore, agri-food systems actions and interactions occur at different spatial scales (e.g., local, regional, global) and are inclusive of the full array of food production practices (e.g., industrial, agro-ecological). It should be noted that the terms “food systems” and “agri-food systems” are overlapping and often used interchangeably. This paper does not attempt to address the relationship between these two terms.

Global agri-food systems have long been criticized for a number of shortcomings including environmental degradation (greenhouse gas emissions, deforestation, soil erosion and degradation, biodiversity loss, water and air pollution), perpetuating socio-economic inequities (disadvantaging small-scale producers, favouring large multinational corporations, exploiting the global south), failing to address food insecurity and hunger (uneven access, malnutrition, lack of culturally appropriate foods), and a growing disconnect between people and the food and environment on which they rely. These shortcomings have been exacerbated by increasingly complex and devastating global crises, including COVID-19, socio-political unrest, and climate change (Clapp & Moseley, 2020; Trudeau et al., 2021; Yasmeen, 2023). The 2023 Climate Change Report prepared by the Intergovernmental Panel on Climate Change (IPCC) reconfirms that climate change is already impacting global agri-food systems (extreme weather events, new pests and disease) and is reducing food security (food shortages, crop failures)

(IPCC, 2023). However, the relationship between global crises and agri-food systems is complex in that agri-food systems both contribute to and are affected by many global stressors (Tubiello et al., 2022). Agri-food systems transitions are needed to both adapt to and mitigate future impacts.

Academics, UN Agencies, non-governmental organizations, and civil society groups have been calling for agri-food systems change for years (FAO, 2021; Held, 2023; IPCC, 2023; Soma & Wakefield, 2011). While there is consensus that current agri-food systems are not sustainable, there is little agreement around what changes are needed, at what scale, and which actors should lead this change (Brock, 2023). Some are calling for an increased role in technology (e.g., precision agriculture, cellular agriculture, renewable energies) and the need for more efficient practices (Benyam et al., 2021; Fraser & Campbell, 2019; Fraser & Newman, 2023; Saiz-Rubio & Rovira-Más, 2020; Weersink et al., 2018). Others suggest transitioning to more decentralized agri-food systems and that agro-ecological models of production are needed to address current power imbalances and transition to more resilient and just food systems (Anderson et al., 2019; Blay-Palmer et al., 2016; Clapp, 2023; Clapp et al., 2018; Clapp & Moseley, 2020; Knezevic et al., 2017; Tittonell, 2020). The 2023 IPCC report argues that land management options (e.g., sustainable agricultural intensification, agroforestry, farm and landscape diversification, and urban agriculture) and demand-side responses (dietary choices, reduced post-harvest losses and food waste) can work together to achieve multiple objectives including, eliminating hunger, promoting good health and wellbeing, and reducing environmental impact (2023, p. 54). However, all of these diverse perspectives agree that business as usual is not an option and that change is needed now.

The role of the planning profession

In North America, discussion about including food systems as part of the planning portfolio can be traced back to the end of the 1990s (Pothukuchi & Kaufman, 1999, 2000). In their seminal work, Pothukuchi and Kaufman define food systems as the “chain of activities connecting food production,

processing, distribution, consumption, and waste management, as well as all of the associated regulatory institutions and activities” (Pothukuchi & Kaufman, 2000, p. 113). Community food security was the primary driver behind Pothukuchi and Kaufman’s work which revealed that few planners in America viewed food systems as part of the planning portfolio (Pothukuchi & Kaufman, 1999, 2000). Since then interest in food systems planning and community food planning has continued to grow (Campbell, 2004; Donald, 2008; Morgan, 2009, 2013; Music et al., 2021; Raja et al., 2017; Reynolds, 2009; Sonnino, 2009; Thibert, 2012).

Today, food systems planning is a space where scholars, planners, decision-makers, activists, economic development and public health professionals can work together to address sustainable development through the lens of food systems (Blay-Palmer, 2009; Donald, 2008; Lang, 2014; Morgan, 2013; Wegener, Raine, et al., 2012). Food systems planning encompasses a dynamic portfolio of concerns, including the impacts of urban sprawl (Port & Moos, 2014; Rivers, 2004), economic development (Desjardins et al., 2011; Soma & Wakefield, 2011; Wekerle, 2004), public health (Desjardins et al., 2011; Hodgson, 2009; Mui et al., 2018; Wegener et al., 2013), community vitality and development (Wekerle, 2004), agriculture (Caldwell et al., 2020, 2021; Caldwell & Hilts, 2005; Connell et al., 2013; Lang, 2014; Waldick et al., 2017), sense of place (Irvine et al., 1999), social justice (Blay-Palmer, 2009; Raja et al., 2017), and environmental sustainability (Desjardins et al., 2011; Waldick et al., 2017), among others. Furthermore, it is recognized that agri-food systems planning, much like agri-food systems themselves, occurs at multiple scales (Hansen et al., 2021; Mendes et al., 2011). This QE paper will focus on municipalities as the most local level of government involved in agri-food system planning activities.

Purpose statement

In a world that is facing increasingly complex problems—from climate change and socio-political unrest to global health crises—our agri-food systems are more important than ever. A recent report by FAO

(2021) regarding The State of Food and Agriculture states that “In an ideal world, all agri-food systems would be resilient, inclusive and sustainable, producing sufficient safe and nutritious food to meet the needs of all for an active and healthy life – without compromising the food security, health and nutrition of future generations” (p. 1). This definition offers a starting point for what agri-food systems should look like. Within this context, this paper builds upon existing literature that argues:

1. Current agri-food systems have a number of shortcomings and are widely criticized for being unsustainable (Clapp & Moseley, 2020; FAO, 2021; Held, 2023; IPCC, 2023; Yasmeen, 2023);
2. Local and regional agri-food systems have an important role in transitioning to more sustainable agri-food systems (Blay-Palmer et al., 2016; Clapp & Moseley, 2020; Knezevic et al., 2017; Soma & Wakefield, 2011; Sumner, 2012); and
3. The planning profession has a role to play in supporting local and regional agri-food systems (Buchan et al., 2015; Hansen et al., 2020, 2021; Lang, 2014; Raja et al., 2008).

While there is well established interest in agri-food systems planning, it is less clear what capacity is needed to undertake this work (Caldwell et al., 2020, 2021; Soma & Wakefield, 2011; Zink et al., 2022).

The primary purpose of this paper is to explore agri-food systems planning, and capacity as discussed by the literature. More specifically, this paper will address two questions:

- 1. What is agri-food systems planning and what does it look like? What are the roles and tools available to planners? (Part 1)**
- 2. How can capacity, as a conceptual tool, inform our understanding of agri-food systems planning? (Part 2)**

Building on these questions, a conceptual framework for municipal agri-food systems planning capacity is proposed (Part 3).

A note on agriculture and rural

The purpose of this section is twofold: first to address the concept of rurality as it relates to my program of study and second to challenge the urban-rural dichotomy as it relates to agri-food systems (Shellabarger et al., 2019). I feel this section is important in setting the stage for this QE paper and my research interests more broadly.

Defining rural

Discussion about the conceptualization of “rural” or “rurality” in research has been ongoing for decades (Cloke, 2006; Delgado-Viñas & Gómez-Moreno, 2022; Halfacree, 1993, 2009; Hoggart, 1990; Nelson et al., 2021; Sharp & Clark, 2008). It is widely recognized that “rural” is a social construct and as a result there is no one definition or metric for what is considered rural. Over the years, scholars have suggested a number of different definitions of rural, most of which can be categorized as being either descriptive or socio-cultural in nature (Cloke, 2006). Descriptive definitions of rural include more tangible characteristics of a community, including primary industries (agriculture, natural resources), low population density, dispersed development patterns, and/or proximity to urban centers (Halfacree, 1993). In contrast, socio-cultural definitions of rural are rooted in socio-cultural characteristics (traditional values) and individual experiences and perceptions of rurality (close-knit community relations) (Halfacree, 1993).

These two categories of rural, the descriptive and the socio-cultural, correspond to what Bell (2007) refers to as the first rural (descriptive, material) and second rural (socio-cultural, ideological). In Bell’s paper they argue that the first rural, most often evoked by American scholars, is focused on physical and spatial characteristics of rural, including population density, land use, and the built form. Bell (2007) goes on to elaborate that urban and rural, in the first rural, are seen as dichotomous, so that a line can

be drawn on a map delineating the two. Furthermore, Bell (2007) suggests that “first rural is a fundamentally relative view of rurality, in which the rural is always understood with respect to . . . the urban” (p. 405). In Bell’s work, the second rural, which is associated with European scholarship, “calls upon the connections we have long made between rural life and food, cultivation, community, nature, wild freedom, and masculine patriarchal power, and the many contradictions we have also so long associated with the rural, such as desolation, isolation, dirt and disease, wild danger, and the straw-hatted rube” (p. 409). Bell goes on to propose the “rural plural” or the concept that both the first and second rural need to be embraced to create a complete and dynamic understanding of rural:

The rural plural defends and it extends. It finds boundaries and it overcomes them. It constructs categories and it reconstructs them. It is a politics of land tenure, of labor markets, of community and neighborhood development, of agricultural change, of food sheds, of good food for school lunches, of forest fires and environmental disasters, of refugees, of resource control and management, of pollution, of national parks, . . . of the social power and social knowledge involved in all of this, and of so, so much more. . . . The epistemological point of the rural plural is not to gobble everything into the rural, and to say that is all that is . . . rather, its argument is that like all really big social concepts—power, capital, gender, race and ethnicity, class, for example—the rural is something we can see pretty much everywhere in social life, and maybe indeed everywhere. (2007, p. 413)

Both the first rural (descriptive, material) and the second rural (socio-cultural, ideological), as well as the rural plural, can be and often are associated with agriculture. Halfacree (1993) found that agriculture was one of six descriptive definitions of rural (p. 24) and was most often associated with land-use and social relation studies. More recently, Nelson et al. (2021) completed a literature review of quantitative measures of rurality and indicated that 18% of the papers that met their inclusion criteria included

“agriculture, forested, or natural land” as a dimension of rurality (p. 354). In the above discussion of Bell’s work, agriculture is related to the first rural when considering land use patterns and to the second rural in the association between rural life and food and cultivation (among others). There is no doubt that agriculture has long been associated with rurality (Cloke, 2006).

In fact, in some cases, the association between agriculture and rural results in the conflation of rural with agriculture. Waldheim (2019) states that,

The agrarian and the urban are two categories of thought that have more often than not been opposed to one another. Across many disciplines, and for many centuries, the city and the country have been called upon to define each other through a binary opposition. (p. 63)

The relationship between agriculture and rural as dichotomous to urban is possibly explained by the fact that increased agricultural productivity is often viewed as one of the precursors to the formation of cities (Fields, 2012; Steel, 2008). However, this dichotomous view of urban and rural, or urban and agricultural, has not gone without criticism.

For decades, urban-rural discourse has recognized the blurring boundaries between urban and rural (Brenner & Schmid, 2014; Cloke, 2006; Delgado-Viñas & Gómez-Moreno, 2022; Hoggart, 1990; Tacoli, 1998). One approach to address this blurring is the rural-urban continuum. The rural-urban continuum is a concept that acknowledges the diverse and varied nature of settlements, ranging from remote rural to highly urban (Castree et al., 2013). Furthermore, this approach acknowledges that there is no clear boundary between urban and rural spaces, suggesting that settlements can exhibit both ‘urban’ and ‘rural’ characteristics (Halfacree, 2009, p. 220). The rural-urban continuum also supports thinking about how settlements across space are interrelated and intertwined with one another (Castree et al., 2013).

Today, the rural-urban continuum is generally accepted by rural/urban scholarship (Delgado-Viñas & Gómez-Moreno, 2022; Nelson et al., 2021).

It is important here to acknowledge the work of German sociologist, Ferdinand Tönnies, who's 1887 book *Gemeinschaft und Gesellschaft* provided the groundwork for the rural-urban continuum. Tönnies's thesis argued that "human societies had changed through history from being characterized by Gemeinschaft associations – communities built around kinship, neighborhood, cooperative behavior, and place attachment – to becoming Gesellschaft associations – societies of impersonal and instrumental relations founded on formal contract and exchange" (Halfacree, 2009, p. 119). The focus Tönnies places on the shift from "rural" (Gemeinschaft) to "urban" (Gesellschaft) is corroborated by Delgado-Viñas & Gómez-Moreno (2022) who completed a paradigmatic, methodological and bibliographic review of urban and rural interactions and found that an urban-centric standpoint underpinned most studies of rural areas. In fact, some scholars argue that urbanization has become a global phenomenon in that no settlement or socio-spatial arrangement is left untouched by processes of urbanization (Brenner & Schmid, 2014). A similar discussion is taking place among scholars looking at the intersection of rural and agriculture.

The relationship between rural and agriculture

Friedland's 2002 work titled *Agriculture and Rurality: Beginning the "Final Separation"?* calls to question the association of agriculture and rural, asking "When is a farm a farm? When is rural rural?" (p. 350). Friedland's work questions the alignment between what we believe/think/imagine to be rural and what (modern) agriculture has become. They argue that "even though "agribusiness" and "agriculture" are both concerned with the production of food and fiber, the social relationships in the two entities differ qualitatively and quantitatively" (Friedland, 2002, p. 353). This discussion continues to be relevant today as agricultural operations are shifting towards either large-scale, intensive production or small-scale,

diversified production in an attempt to remain viable (Shellabarger et al., 2019). Earlier discussions regarding the distancing of “rural” and “agriculture”, include Lowry Nelson’s (1958) commentary in the Minneapolis Sunday Tribune:

The farmer can no longer be considered as a different breed,” maintains Lowry Nelson, eminent rural sociologist. “He is no more individualist, fatalistic, conservative, democratic, puritanical, thrifty, frugal, suspicious of strangers, outspoken or susceptible to mass hysteria than any other segment of society. (Asleson, 1958; Bell, 2007, p. 406).

Shellabarger et al. (2019) continue this discussion and look specifically to explore “the blending of rural and urban identities through processes of rural deagrarianization and urban reagrarianization” (p. 91). In contrast to the previously discussed urban-centric approaches to understand the blending of urban and rural identities, Shellabarger et al. (2019) focuses on processes of agrarianization and adopts a pluralistic definition of rural, inclusive of both the material (first) and ideological (second) rural (Bell, 2007). In the case of agri-food systems, the rural plural embraces connections and commonalities across space and creates opportunities for effective problem solving of shared agri-food systems challenges (e.g., power relations, access to resources) (Shellabarger et al., 2019). This approach is supported by Hoggart (1990) who challenges rural scholarship to look for similar social processes and shared experiences across space and place.

Adding to this discussion, the *FAO Framework for the Urban Food Agenda* (2019) speaks to the role of (agri-) food systems in breaking the rural-urban divide. In this context, agri-food systems are seen as contributing to more sustainable, resilient, and inclusive territories. While there is a notion that challenging the rural-urban divide is essential to addressing agri-food systems challenges, Halfacree (2009) reminds us that,

This deeply culturally embedded perceptual sense of urban–rural difference can, to some extent, be seen to be reinforced further by, and indeed also informs, key institutional practices, such as land-use planning, where a desire to retain a clear spatial demarcation between town and country is reflected in such things as Green Belt policies and the generally strict regulations preventing urban ‘sprawl’ into the countryside. (p.123)

This quote provides a salient reminder that land-use planning policy often employs what would be considered the first rural (descriptive, material) and that the demarcation between rural and urban has a very important role to play in ensuring agricultural land remains available for future generations. Nelson (2021) suggests that descriptive, quantitative measures of rural “remain popular with both researchers and policy makers as they provide opportunities to assess and develop practical applications at scale” (p. 352). Conceptualizations, definitions, and measurements of rural areas have important implications for policy and program development across all levels of government (Lichter & Ziliak, 2017; Nelson et al., 2021). In this light, I want to acknowledge the important role of rural land-use policies in agri-food systems planning and suggest that there are important synergies that can be drawn by looking across urban and rural spaces and places when looking to understand and address agri-food system challenges. The following section of this QE will look to address agri-food systems planning, inclusive of urban, rural, and regional spaces, places, and scholarship.

Part 1: Agri-food system planning

The purpose of this section is to address the question “What is agri-food systems planning and what does that look like? What are the roles and tools available to municipal planners?” This section relies heavily on the article titled *Local Agri-food Systems as a Municipal Priority - Considering the Role, Approach and Capacity of Municipal Planning Departments* prepared by Zink et al. in early 2022. This paper was prepared as part of the QE process and includes the findings of a systematic literature review looking at “the role and approach of municipal planning departments in agri-food systems in Ontario” (Zink et al., 2022, p. 1).

What is agri-food systems planning?

As indicated in the introduction of this paper, discussion about including food systems as part of the planning portfolio in North America can be traced back to the late 1990s (Pothukuchi & Kaufman, 1999, 2000). The following decades brought debate and elaboration as to what exactly food systems planning is and what it involves (Buchan et al., 2019; Campbell, 2004; Issac et al., 2022; Morgan, 2009; Music et al., 2021; Reynolds, 2009; Sonnino et al., 2019; Thibert, 2012). Today, food systems planning is defined as:

... the collaborative planning process of developing and implementing local and regional land-use, economic development, public health, transportation, and environmental programs and policies to: (1) preserve existing and support new opportunities for local and regional urban and rural agriculture; (2) promote sustainable agriculture and food production practices; (3) support local and regional food value chains and related infrastructure involved in the processing, packaging, and distribution of food; (4) facilitate community food security, or equitable physical and economic access to safe, nutritious, culturally appropriate, and sustainably grown food at all

times across a community, especially among vulnerable populations; (5) support and promote good nutrition and health; and (6) facilitate the reduction of solid food-related waste and develop or manage a reuse, recovery, recycling, and disposal system for food waste and related packaging. (American Planning Association, n.d.)

Some would argue that food systems planning is not new to the planning profession, but rather the two are becoming reacquainted (Mendes et al., 2011; Steel, 2008; Thibert, 2012; Vitiello & Brinkley, 2014). Ebenezer Howard's Garden City (and the New Towns that followed) and Frank Lloyd Wright's Broadacre City are frequently cited examples of earlier concern for food systems both in planning theory and practice (Mendes et al., 2011; Steel, 2008). Steel (2008) provides a detailed discussion regarding the intimate relationship between human settlement patterns and food systems, and suggests that "without farmers and farming, cities would not exist" (p. 7). Vitiello and Brinkley (2014) offer a similar discussion in their paper, titled *The Hidden History of Food System Planning*, where they discuss food systems planning as part of both colonial and late 19th century planning practice. They argue that food and agriculture were key parts of "physical planning, regional economic development, and strategies to combat poverty and inequality" in both eras (Vitiello & Brinkley, 2014, p. 92). However, increased mechanization and more affordable technologies (e.g., refrigeration) in the twentieth century, resulted in a growing disconnect between societies and the food on which they depend (Mendes et al., 2011; Pothukuchi & Kaufman, 1999) and a rapidly modernizing food industry which quickly outgrew local and regional planning jurisdiction (Vitiello & Brinkley, 2014).

By the mid 1900s food systems were almost entirely absent from municipal planning; however, it was not long before conversations around the conservation and preservation of farmland arose as the result of growing concerns related to urban sprawl, soil degradation, and erosion (Caldwell et al., 2017; Krueger, 1963). In Ontario, the Food Land Guidelines were published in 1978 to assist with agricultural

planning including the protection of agricultural land from urban expansion and a process for re-designating agricultural lands for other uses (Government of Ontario, 1978). The following decades brought to light a myriad of planning concerns relevant to agri-food systems, including farm viability, fragmentation of agricultural land, environmental sustainability, and food security, among others. In Ontario, the approach outlined in the 1978 Food Land Guidelines remained largely the same until the mid 2000s when the agricultural systems approach was first introduced (Turvey, 2020). This change in Ontario land-use policy reflects a larger shift to food systems planning in the planning profession. The transition to food systems planning at the turn of the century brought a more systems-based, holistic perspective of how food intersects with planning activities. This includes, but is not limited to, input suppliers, food processors, distributors, and retailers, but also food access, urban agriculture, health concerns, and power imbalances within existing food systems.

As a profession, planning is difficult to define due to its broad topic area and relationship with adjacent fields of study and practice, including ecology, sociology, and geography, among others (Alexander, 1992). Food systems planning is equally complex and addresses not only matters of land use but also economic, social, and environmental wellbeing. For example, a publication from the American Planning Association (2007) cites a number of reasons for increased interest in food systems planning including the amount of land required to support food systems, concern about the rate of farmland loss, growing health concerns (including hunger and obesity), awareness that access to food is not equitable, the role of agri-food systems in local and regional economies, increased awareness about environmental impacts (including the amount of fossil fuels required, as well as impacts on hydrological systems), and recognition of the important role food systems play in community building. Just as agri-food systems are multidimensional and multifunctional, so is agri-food systems planning (Hansen et al., 2020; Raja et al., 2018; Robert & Mullinix, 2022).

Agri-food systems planning roles and tools for municipal planners

In 2021, the Kwantlen Polytechnic University Institute for Sustainable Food Systems in partnership with the Canadian Institute of Planners prepared a report titled *Planning for Sustainable Food Systems - Findings from a Survey of Canadian Planners and Practitioners*. The largest group of survey respondents was planners working in local government, half of whom indicated they were involved in agri-food systems planning to some extent (Hansen et al., 2021). This same study found rural land use planning, urban agriculture and community gardens, agricultural planning, food access and food security, capacity/relationship building, rural/agricultural economic development, food policy development, and food policy advocacy, were among the top areas of focus for planners work in food systems planning (Hansen et al., 2021, p. 19). These areas of focus are inclusive of a broad array of planning functions - beyond what may traditionally be conceptualized as part of the domain of community and land use planning (Lang, 2014). Similarly, Soma and Wakefield (2011) interviewed food systems planners from Canada and the USA to develop an applied understanding of what agri-food systems planning entails. Their participants suggested that a “food system planner needs to not only be a technical expert, but also, given the appropriate context, a teacher, advocate, liaison, capacity-builder, and facilitator” (Soma & Wakefield, 2011, p. 60).

While there are numerous publications on specific aspects of agri-food systems planning, literature addressing the roles and tools of local governments in carrying out agri-food systems planning is limited (Buchan et al., 2015; Soma & Wakefield, 2011); Two key publications provide discussion on this topic, including:

1. *A Planners Guide to Community and Regional Food Planning: Transforming Food Environments, Facilitating Healthy Eating* written by Samina Raja, Branden Born, and Jessica Kozlowski Russell published in 2008.

2. *Local Food System Planning: The Problem, Conceptual Issues, and Policy Tools for Local*

Government Planners written by Robert Buchan, Denise Cloutier, Avi Friedman and Aleck Ostry in 2015.

Zink et al. (2022) build on these two publications and identify ten roles of municipal planners, including:“(1) Regulation and policy reform; (2) Coordination and facilitation - General; (3) Coordination and facilitation - Community and food systems stakeholders; (4) Creating space, empowering, and listening; (5) Projects and programming; (6) Leadership and politics; (7) Information generation and dissemination; (8) Monitoring and evaluation; (9) Challenge planning culture/tradition; (10) Plan making and design” (p. 3). These roles can broadly be understood as belonging to one of three categories: regulatory, non-regulatory, and communication/facilitation.

Regulatory roles and tools (Modified from Zink et al., 2022)

Regulation and policy reform is widely recognized in the literature as a key role for planning in supporting agri-food systems (Bennett, 2003; Caldwell et al., 2021; Desjardins et al., 2011; Hayhurst et al., 2013; Huang & Drescher, 2015; Macdonald et al., 2021; Music et al., 2021; Wegener et al., 2013).

Lang (2014) suggests that,

The role of planning in food system resiliency is one of enabling and supporting. Planners themselves may not be the professionals who will actually implement components of food system resiliency, but they can ensure that there are few barriers for those who come forward with projects. (p. 54)

Municipal planning departments play an important role in amending existing land-use policy, as well as the creation of new plans and policies that support agri-food systems. Codifying support for agri-food systems in local and regional regulatory texts signals a long-term commitment to supporting local and

regional agri-food systems, in addition to increasing transparency and consistency of municipal decision-making. Building from the list provided by Zink et al. (2022), policy reform should:

- integrate food systems supportive and prescriptive language;
- reduce barriers to non-conventional forms of food production and retail;
- encourage multifunctional agricultural practices;
- consider the benefit of distinguishing food retail (specifically grocery stores) from other commercial uses;
- recognize diversity in agriculture and provide flexibility for farm parcel-size;
- minimize the creation of new lots in agriculture areas;
- consider mixed-use zoning as a way to encourage food retail;
- promote the use of vacant lands for urban agriculture;
- include community gardens as part of green space planning;
- pre-zone areas to encourage high density development;
- encourage agriculture-related infrastructure including cold storage, distribution, processing, and packaging infrastructure; and
- accommodate on-farm diversification and on-farm value added uses (Akimowicz et al., 2022; Bennett, 2003, 2003; Buchan et al., 2019; Caldwell et al., 2022; Desjardins et al., 2011; Hayhurst et al., 2013; Huang & Drescher, 2015; Lang, 2014; Music et al., 2021; Port & Moos, 2014; Soma & Wakefield, 2011; Wegener et al., 2013; Zink et al., 2022).

This list is not exhaustive, nor is it implied that each item is applicable in every context. Key to implementing supportive agri-food system policies and plans is consultation with local agri-food systems stakeholders to better understand context-specific challenges and opportunities (Akimowicz et al., 2022;

Deloitte, 2013; Desjardins et al., 2011; Van Osch, 1997). In their study of Canadian planners working in food systems planning, Hansen et al. (2021) find that many planners lack knowledge about how policy and regulatory tools could be “leveraged to address key issues such as food security, farmland protection, and infrastructure development” (p. 24). Furthermore, planners reported that they were unsure how to integrate agri-food systems planning into other areas of planning (Hansen et al., 2021).

Non-regulatory roles and tools (Modified from Zink et al., 2022)

Beyond regulatory tools, there are a number of initiatives that planners can support related to agri-food systems planning. Non-regulatory tools are an important way planners can move beyond what is traditionally conceptualized as part of community and land use planning (Hansen et al., 2021; Lang, 2014; Soma & Wakefield, 2011). Non-regulatory projects and programs discussed in the literature include: community gardens, buy local strategies, food and farm tours, edible landscapes, farmers markets, funding initiatives, rent subsidies [for land or facilities], environmental and water quality programs, food hubs, food/agricultural festivals, demonstration gardens/farms, food asset mapping, and community food assessments, among others (Buchan et al., 2015, 2019; Caldwell et al., 2020, 2021; Music et al., 2021; Raja et al., 2008; Trudeau et al., 2021).

Furthermore, planners can play a role in educating councils and the public on broader agri-food systems issues (Buchan et al., 2019). Specific examples identified in the literature include the role of planners in providing public education and awareness (Huang & Drescher, 2015), informing the public/council/staff about the value of food policy (Buchan et al., 2019), helping civil society understand planning documents (Macdonald et al., 2021), and the creation of land inventories (Huang & Drescher, 2015; Thibert, 2012). The literature also speaks to the importance of monitoring and evaluation as part of effective agri-food systems planning (Deloitte, 2013). For example, Desjardins et al. (2011) discuss “the importance of

monitoring the social, economic, agricultural, and developmental outcomes and challenges that result from implementing food policies” and the importance of establishing baseline metrics (p. 9).

Another way municipal planning departments can support agri-food systems is through providing staff resources to support key initiatives external to the planning department (e.g., having a staff member sit on the municipal agri-food advisory committee). Providing resources to agri-food stakeholders “utilizes the capacity, skills and knowledge of non-local government people to undertake work in a limited partnership with the local government by providing resources which can be in the form of funds, land, staff support or facilities” (Buchan, 2015, p. 13).

Facilitation and coordination roles and tools (Modified from Zink et al., 2022)

Planners also play an important role in facilitation and coordination between the multitude of stakeholders involved in agri-food systems planning. Agri-food systems span multiple, overlapping jurisdictions and facilitation and coordination play an important role in promoting urban to rural linkages (Hayhurst et al., 2013; Lyson, 2004; Sharp & Clark, 2008), providing financial incentives (Macdonald et al., 2021; Waldick et al., 2017), pooling resources (Clark et al., 2017; Trudeau et al., 2021), coordinating program delivery (Waldick et al., 2017), implementing regional plans and policies (Wegener, Raine, et al., 2012), facilitating a reflexive agri-food planning process (Clark et al., 2017), and connecting the dots between different areas of agri-food systems (Hansen et al., 2021; Lang, 2014; Soma & Wakefield, 2011; Trudeau et al., 2021). Lang (2014) argues that planners are ideally situated to coordinate agri-food systems planning at the municipal level because the planning profession already overlaps with, and is connected to, several agri-food systems aspects (including economic development, natural heritage, public health, environmental sustainability, climate change, and tourism, among others). Furthermore, planners possess soft skills related to facilitation and coordination such as

communication, stakeholder management, leadership, problem solving, and conflict resolution (Hansen, 2021).

Looking at specific aspects of coordination and facilitation, Caldwell et al. (2021) and Macdonald et al. (2021) speak to the role of intergovernmental collaboration and territorial coordination, including partnership with neighboring municipalities, coordination between upper- and lower-tier municipal governments, and relationship building with conservation authorities. Interdepartmental coordination also has an important role to play in food systems planning. Specifically, partnerships with public health (Blay-Palmer, 2009; Desjardins et al., 2011; Hodgson, 2009; Lang, 2014; Mui et al., 2018; Music et al., 2021; Wegener et al., 2013; Wegener, Hanning, et al., 2012; Wegener, Raine, et al., 2012), economic and community development (Caldwell et al., 2021; Music et al., 2021; Soma & Wakefield, 2011), and climate change/disaster management (Lang, 2014) are recognized as strengthening agri-food systems planning activities. Facilitation and coordination in this context is important for building shared vocabulary and vision (Hansen et al., 2021; Music et al., 2021; Wegener, Raine, et al., 2012). These partnerships can also be used to strategically position food systems planning as part of the municipal agenda, gain support from council, coordinate policy development, and access existing partnerships with community stakeholders (Buchan et al., 2019; Waldick et al., 2017; Wegener, Hanning, et al., 2012; Wegener, Raine, et al., 2012; Wegener et al., 2013).

Wekerle (2004) speaks specifically to partnerships that link food systems planning to civil society (e.g., committees, task forces, and coalitions). Similarly, Caldwell (1998) and Waldick et al. (2017) emphasize the need for broad sectoral consultation and multi-participant planning and decision-making approaches. This type of network involvement and multi-participant planning is important for linking municipal staff as well as councils to a diversity of stakeholders, including food agencies, social justice groups, and community garden advocates (Wekerle, 2004), as well as, food policy councils (Blay-Palmer,

2009; Deloitte, 2013; Lang, 2014; Trudeau et al., 2021), farm community groups (Van Osch, 1997; Macdonald et al., 2021), agricultural advisory committees (Caldwell et al., 2020; Epp, 2019), and private organizations (Donald, 2008; Macdonald et al., 2021).

Why agri-food systems planning

Two decades after being introduced to the planning portfolio, food systems planning continues to be an important topic for the planning profession (Hansen et al., 2020; Raja et al., 2017). Clark et al. (2017) explain that “Problems in food systems are typically addressed through a narrow disciplinary/sectoral lens. For instance, a discipline may focus on the production of food (agriculture) or the consumption (nutrition) or the allocation of land on which food is grown (land-use planning). . . . Such narrow perspectives often fail to recognize externalities” (p. 316). Agri-food systems planning strives to provide a more holistic and systems-based perspective which recognizes the complex, interconnected nature of agri-food systems stakeholders and processes, beyond traditional rural-urban divides (Hansen et al., 2020, 2020; Lang, 2014; Wegener et al., 2013).

However, work related to agri-food systems planning is in early stages and a number of gaps and areas for improvement have been identified (Hansen et al., 2021). For example, Sonnino et al. (2019) identify that the middle stages of food systems (processing, transportation, storage, etc.) receive less attention than food production and consumption both in theory and in practice. Similarly, Trudeau et al. (2021) provide three recommendations for municipal food systems planning in Calgary including the need to “recognize food infrastructure as core infrastructure” (p. 29). Trudeau et al. (2021) also suggest that greater emphasis is needed for “inclusive governance practices” and “critical equity approaches” in food systems planning (p. 29). This call for more socially responsible agri-food systems planning is echoed by a number of scholars who argue that agri-food systems planning has a long way to go in addressing structural inequities and legacies of imperialism and colonization (Blay-Palmer, 2009; Clark et al., 2017;

Hansen et al., 2021; Raja et al., 2017, 2018; Wekerle, 2004). Furthermore, there is some confusion about the role of municipal planning in agri-food systems governance (Dring et al., 2023; Hansen et al., 2021; Lang, 2014). For example, Dring et al. (2023) suggest that

Multiple limits to governing agricultural systems include the promotion and implementation of simple solutions to complex problems, limited ability to engage with the diversity of the agricultural sector and their different needs, and governance mismatches with the boundaries of agriculture (i.e., farm parcels, Agricultural Land Reserve area) and the administrative scale of the municipality. (p. 1)

Agri-food systems are highly complex systems that transcend sectoral, jurisdictional, and disciplinary boundaries; however, municipalities have a key role to play in agri-food systems planning, particularly as it relates to local and regional agri-food systems (Buchan et al., 2019; Hansen et al., 2020; Kaufman, 2009; Pothukuchi & Kaufman, 2000; Trudeau et al., 2021). Hansen et al. (2020) argue that “As food systems planning has emerged as a legitimate field of practice over the past two decades, so has the opportunity to plan for a food system that works toward community, economic and environmental health and wellbeing” (p.1).

Part 2: Capacity as a conceptual tool

The purpose of this section is to address the question “How can capacity, as a conceptual tool, inform our understanding of agri-food systems planning?” More specifically, this section discusses various ways capacity is conceptualized and operationalized in academic literature. This section relies on *Conceptualizing and Operationalizing Planning Capacity* by Carolyn Loh (2015) which offers the only comprehensive review of how planning capacity is discussed in the literature. Loh (2015) defines capacity as “the amount of professional and budgetary resources that are available to an entity to carry out a process, and the degree of sophistication with which the process is carried out” (p. 114). Additionally, this section reviews articles from bodies of literature that overlap with or are adjacent to planning, including those relevant to organizational capacity, local government capacity, and policy capacity.

Why capacity?

There is a growing body of literature that recognizes the role of planning capacity in contributing to environmental planning objectives, including growth management and residential intensification (Brody et al., 2006; Filion et al., 2004, 2020; Göçmen & LaGro, 2016; Hawkins, 2014; Lee, 2018), stormwater management (Brody et al., 2010; Kim & Li, 2016), coastal land use planning (Norton et al., 2018; Tang, 2008), climate change policies (Tang et al., 2009), and agriculture and agri-food priorities and issues (Caldwell et al., 2020, 2021; Caldwell & Procter, 2013; Davidson, 1988). These articles largely recognize that

When viewed from an institutional perspective, professional planners can be at the centre of personal and inter-organisational networks and interactions, and because planners in part

create the rules that structure government involvement in these relations, they can have a significant influence on the outcomes of planning processes. (Hawkins, 2014, p. 1686)

This sentiment is corroborated by Göçmen & LaGro (2016) who argue that “planning capacity at the local government, where the review and approval of most land planning activity takes place, is critical for advancing community and regional sustainability” (p. 1513 –1514). Furthermore, this body of literature argues that planning staff capacity is associated with more progressive policies and plans, more effective stakeholder management (including conflict resolution), and higher rates of plan implementation (Hawkins, 2014; Lee, 2018; Loh, 2015). Berke (2006) adds that planning staff capacity “has a potentially important influence on whether issues raised by plans are acted upon” and that “increased capacity means more attention is given to the explanation of plan policies and associated rules, to the provision of information to applicants, to the conveyance of policy advice, and to the coordination with other public agencies charged with permit review” (p. 586-587). In the context of growth management, Filion et al. (2020) associates increased capacity with residential intensification and the ability to control negative externalities associated with development (e.g., infrastructure and service overload). In the context of stormwater management, Kim and Li (2016) focus on planning staff (capacity) because of their central role in flood damage mitigation. Related to land use planning for coastal areas, multiple studies have found that planning capacity is a key factor contributing to plan quality and effectiveness (Heim LaFrombois et al., 2022; Tang, 2008). Norton et al. (2018) add an interesting observation that “Focus on coastal management is inversely associated, however, with the use of planning consultants” (p. 183).

Inherent to the study of capacity, is the idea that capacity is inconsistent and varied. Göçmen & LaGro (2016) found that larger, more affluent, and better educated counties with a metropolitan status were more likely to have higher staff capacity. This naturally means that smaller, less affluent, and less

educated counties had less staff capacity. A similar finding arose from Lee's (2018) doctoral research which suggests that planning capacity (the number of staff resources) was a barrier for townships implementation of the Growth Plan in Waterloo Region. Lee's research also reports that in Simcoe County, limited staff capacity has led to "a reactive, developer-led planning process regarding where and how development should occur" (Lee, 2018, p. 157). Caldwell et al. (2021) report that limited capacity impacts the ability of municipalities to respond to emerging agricultural priorities (p. 258). Frank and Hibbard (2017) report similar challenges with planning capacity in rural areas and provide a quote from one of their research participants:

Unfortunately, rural planners, municipalities, and agencies in Canada are not going beyond the minimum requirements of the planning law, even though legislators intended the law to be a starting point. There is not much time to engage beyond land use regulation. (p. 303)

It is interesting to note that literature looking at the intersection between planning capacity and specific planning goals is limited. For example, Tang et al. (2009) suggest that they are the first to look at the relationship between local planning capacity and climate change. Looking to other bodies of literature, capacity is thought to enable organizations and governments to be proactive instead of reactive (Honadle, 1981; Loh, 2015). Addison (2009) adds that "low administrative capacity has implications for the impact of policy, the quality of multi-level governance, the fulfillment of international obligations and the accountability of the political system" (p. 6).

Conceptualizations of capacity

Now that the significance of planning capacity has been established, it is important to discuss how capacity is conceptualized in the literature. In practical terms the conceptualization of capacity means "devising a working definition for the purposes of the research" (Loh, 2015, p.135). Throughout the

literature, capacity is conceptualized as both an 'ends' and a 'means' (Christensen & Gazley, 2008; Honadle, 1981; Loh, 2015). For example, in a paper addressing capacity building and institutional development, Franks (1999) defines capacity as "the overall ability of the individual or group to actually perform the responsibilities" (p. 52). Similarly, Brinkerhoff and Morgan (2010) define capacity as "being able to achieve a desired collective purpose" (p. 3). Both definitions conceptualize capacity as the ability to achieve a desired outcome. In contrast, Loh (2015), in their paper about planning capacity, explains that "Capacity refers to the amount of professional and budgetary resources that are available to an entity to carry out a process, and the degree of sophistication with which the process is carried out" (p. 134). Similarly, Sokolow (1981) defines capacity in the context of local government as "the resources and expertise necessary to cope with increasingly complex problems" (p. 704). Here capacity is conceptualized as the resources necessary to carry out a process.

In addition to being conceptualized as an 'ends' and a 'means', capacity is generally thought to exist at three levels. Franks (1999) argues that capacity "depends not only on the capabilities of the people but also on the overall size of the tasks, the resources which are needed to perform them, and the framework within which they are discharged" (p. 52). A similar sentiment is present in the 1998 United Nations Development Programme report which discusses three levels of capacity: the individual, the entity (or organization), and the system (or institutional) (UNDP, 1998). This conceptualization of capacity is the most common. That being said, some authors refer to macro, meso (mezzo), and micro levels of capacity which closely mirror the system, organization, and individual levels (Isaza et al., 2015; Saguin et al., 2018). These levels are a useful heuristic tool, but in reality, the division between levels is not so clear. For example, Isaza et al., (2015) suggest that research relating to meso (mezzo) level capacity relates to both the organization and the individual, "focusing on the role of individuals in organizations" (p. 8). Morgan (2005) suggests that systems thinking provides an alternative to the traditional hierarchical view of capacity. More specifically, Morgan (2005) argues that

In practice, most systems draw information, resources and energy from a whole range of places and span many boundaries and levels. The question is less about the identification of the hierarchical level and more about the nature, distribution and interconnection of the system actors. (p. 16)

Adopting a more systems-oriented approach better captures the role of external actors, networks, and relationships involved in carrying out a task (e.g., agri-food systems planning). Systems thinking is an analytical framework or approach that examines interrelated elements and actors, and the relationships between them, to understand how they carry out a specific purpose or function (Meadows, 2009; Posthumus et al., 2018). Posthumus et al. (2018) argues that “system approaches are considered necessary to deal with problems that are complex, uncertain and/or wicked, requiring different forms of knowledge to identify solutions that can trigger systemic change” (p. 12). In this context, setting system boundaries is an important exercise in managing scope. Boundaries are an important part of systems thinking as without them systems have no limits (Meadows, 2009). Posthumus et al. (2018) suggests that the system’s purpose or function helps to define the systems boundary.

What is planning capacity

Planning is a key function of municipal governments and can be understood in the context of public administration (Loh, 2015). This is supported by Brody et al. (2010) who suggest that organizational capacity provides a complete conceptualization of local planning capacity. Drawing on the literature, Brody et al. (2010) conceptualize **organizational capacity** “as the ability to anticipate flooding, make informed decisions about mitigation, and implement effective policies” and identify that “key characteristics of organizational capacity include financial resources, staffing, technical expertise, communication and information sharing, leadership, and a commitment to flood protection” (p. 171).

This conceptualization of capacity includes consideration for inputs (budget, technical expertise) as well as outcomes (the ability to achieve a common goal - in this case, flood mitigation).

In the context of **local government**, Gargan (1981) posits that capacity is the ability of the government to “do what it wants to do” (p. 652). Gargan (1981) goes on to say that “local government capacity is a function of expectations, resources, and problems” (p. 653). This definition is broad and can be applied to any number of local government functions including planning. Gargan’s conceptualization of capacity also speaks to the dynamic and process-oriented nature of capacity (Grindle & Hilderbrand, 1995; Isaza et al., 2015).

Specific to local planning, Loh (2012) defines **planning capacity** as “the amount of professional and budgetary resources available to a government to carry out the planning process” (p. 38). A similar resource/input focused definition is provided by Brody et al. (2006) who view planning capacity as “the number of planners that contribute to the development of the comprehensive plan” (p. 298). Loh (2015) provides a summary of how planning capacity is conceptualized in the literature, and identifies tangible and intangible resources, as well as desired outcomes (Figure 1).

Conceptualization of Capacity	Author/Year
Resources (inputs)	
Tangible inputs	
Financial	Cohen, Raudenbush, and Ball (2000) and Loh (2012)
Expertise	Sokolow (1981), Brody (2003), and Brody, Carrasco, and Highfield (2006)
Staff	Dalton and Burby (1994) and Loh (2012)
Intangible inputs	
Connections/political capacity	Glickman and Servon (2003) and Gittell and Vidal (1998)
Social capital	Goldfinger and Ferguson (2009), Dent (2008), and Loh (2012)
Capability (outcomes/outputs)	
To do what [the government] wants to do	Gargan (1981)
To plan	Honadle (1981) and Greasley, John, and Wolman (2011)
To capture and manage resources	Honadle (1981) and Seroka (1988)
To provide services	Deller, Nelson, and Walzer (1992) and Visser (2004)
To provide leadership	Visser (2004)
To implement a mandate	May (1993)

Figure 1: Loh’s summary table of “Conceptualizations of Capacity” (2012, p. 137).

Since the publication of Loh's review of planning capacity in 2015, several papers have been published which speak to the conceptualization of planning capacity in specific contexts. Kim and Li (2016) look at the role of planning capacity in sustainable stormwater management and explain that in this context "planning capacity refers to features that can be controlled by local governments, such as the planning resource and process as well as the institutional capacity" (p. 4). Heim LaFrombois et al.'s (2022) study conceptualizes capacity in the context of green infrastructure planning and groups inter/intra organizational coordination and capacity together. Here organizational planning capacity is seen to be a function of "leadership and collaboration, planning responsibility and oversight, and resources" (Heim LaFrombois et al., 2022, p. 11). This conceptualization of capacity is unique in that it recognizes the importance of multiple types of collaboration - "with other organizations and departments within a given municipality, with higher level organizations that may set guidelines or provide funding, and with neighboring municipalities that share ecological features" (Heim LaFrombois et al., 2022, p. 9).

In 2016, Göçmen and LaGro looked at planning capacity to support environmentally sustainable residential development and conceptualized planning capacity as the presence and characteristics of the planning department, in addition to the planning director/manager's perceptions of sustainability, and the presence of local policies that were supportive of sustainable growth (Göçmen & LaGro, 2016). Furthermore, this conceptualization of capacity considers the number of permits approved for sustainable growth (e.g., conservation subdivisions, transit-oriented developments). This approach considers both the resources required as well as the desired outcomes of the planning activities being studied.

Another type of capacity relevant to agri-food systems planning is policy capacity. In the context of government, **policy capacity** refers to the ability of the government to create, enact, review, and enforce "good" policies (Anderson, 1996; Lawrence et al., 2020; Painter & Pierre, 2005). Lawrence et al.

(2020) cites Gleeson et al. (2009) and Peters (1996) and argues that “policy capacity is the ability to make proactive, cross-cutting, and strategic choices required to successfully deviate from business-as-usual, while a lack of capacity leads to reactive and myopic decisions” (p. 17). This conceptualization of policy capacity aligns with the belief that capacity should contribute to social change (Isaza et al., 2015), and requires capacities related to “negotiation, communication, and a knowledge of the policy process” (Lawrence, 2020, p. 8).

Operationalizing capacity

Moving from conceptualization to operationalization requires a more concrete understanding of the components that contribute to capacity; this is complicated as capacity is recognized as both an outcome and a process. Furthermore, capacity is composed of both quantitative and qualitative factors. Christensen and Gazley (2008) explain that “capacity is also given tangible and intangible, or quantitative and qualitative dimensions, so as to include not only the number of staff but their specialised skills, and the strength or quality of organisational leadership” (p. 266).

Addison (2009) identifies three ways capacity is operationalized in political science literature, first as a latent concept or intrinsic trait, second as a set of manifest components and structures, and third as common knowledge (e.g., the dictionary definition of capacity). In the first scenario, where capacity is operationalized as a latent trait, researchers are “intuiting the existence of a phenomenon that, though unseen, explains outcomes better than observable objects, agents or processes” (Addison, 2009, p. 1). In the second scenario, where capacity is a set of manifest components and structures, capacity can be observed or measured using either formative or reflective measures (Addison, 2009). Using the formative approach, resources (inputs) are conceptualized to precede and determine capacity. In the reflective approach to capacity, outcomes or performance factors are used to infer levels of capacity.

The third scenario relies on the assumption that there is a shared understanding of capacity and often implies that capacity is an intrinsic trait (Addison, 2009).

Looking specifically at planning capacity, Loh's (2015) review identifies several ways planning capacity is operationalized in the literature, including:

- planning budget (or planning budget per capita),
- number of planning department staff (or planning staff per capita),
- number of years of planning experience planning staff had,
- staff membership to professional organizations,
- number of years since major planning documents were updated,
- number of standing committees,
- number of enforcement officers,
- intergovernmental collaboration between upper- and lower-tier governments,
- staff ratings of staffing adequacy, expertise adequacy, and access to council members,
- number of applications processed in a given time period, and
- the frequency of staff meetings.

These components can be considered on their own, or in unique combinations depending on the planning process being studied. The most frequently relied upon components of capacity are staff numbers (or the existence of a planning department) and planning department budget (Loh, 2015).

However, examples of more qualitative considerations can also be found in the literature. For example, Heim LaFrombois et al. (2022) look at "leadership and collaboration, planning responsibility and oversight, and resources" as key components of organizational planning capacity. As a result, their research methods rely on surveys and interviews to collect this qualitative data. There are also a number

of studies of planning capacity that use statistical models to first operationalize and then evaluate planning capacity (Brody et al., 2006; Göçmen & LaGro, 2016; Hawkins, 2014; Heim LaFrombois et al., 2022; Kim & Li, 2016; Tang, 2008; Tang et al., 2009).

It is interesting to note that collaboration is often not included in operationalizations of capacity. As discussed previously, systems thinking in relation to capacity encourages scholars to consider factors both within and external to the organization (networks, political will, etc.), however it is not uncommon for studies of capacity to limit themselves to the organization itself (staff resources, budget, etc.) (Brinkerhoff, 2005; Christensen & Gazley, 2008).

Conceptual frameworks

The literature also provides a variety of conceptual frameworks of capacity. Three conceptual frameworks have been included below due to their relevance. Saguin et al. (2018) propose a broad framework that can be applied to most types of government/policy capacity (Figure 2). In their conceptual framework Saguin et al. suggest that the latent aspect of policy capacity can be understood as process capacity, which is defined as “the skills and competencies of policy actors to use the endowments and resources” (p. 13). Here capacity is operationalized as an “iterative process of generating resources, developing skills and transforming outputs to pave way for further public action” (p. 13). The arrows between input capacity, process capacity, and intermediate outputs are particularly interesting as they illustrate feedback loops between the three.

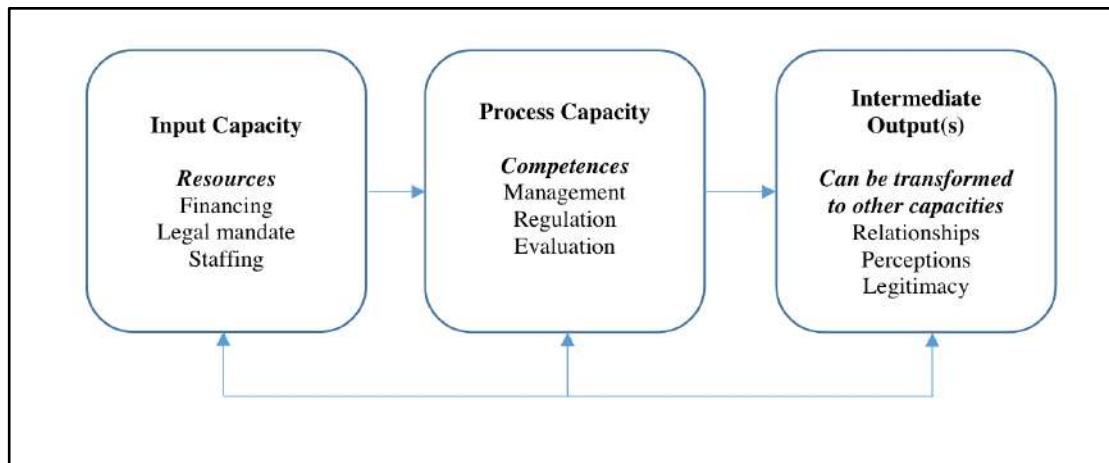


Figure 2: Saguin et al.'s policy capacity framework (2018, p. 11).

The second framework is provided by Grindle and Hilderbrand (1995) who identify five dimensions of sustainable capacity in the public sector. These dimensions include: the action environment, the institutional context of the public sector, the task network, organizations, and human resources (Grindle & Hilderbrand, 1995). The dimensions identified in Grindle and Hilderbrand's framework are intended to be used as levels of analysis (Figure 3). The social, political, and economic factors on the left side of the diagram are difficult and slow to change and compose what Grindle and Hilderbrand (1995) have termed the "Action Environment" (p. 5). What is interesting to note in this framework is that all three levels of capacity are considered (system, organization, and individual) as well as tangible and intangible aspects of capacity. Furthermore, this framework recognizes the important role of collaboration both within and external to the organization.

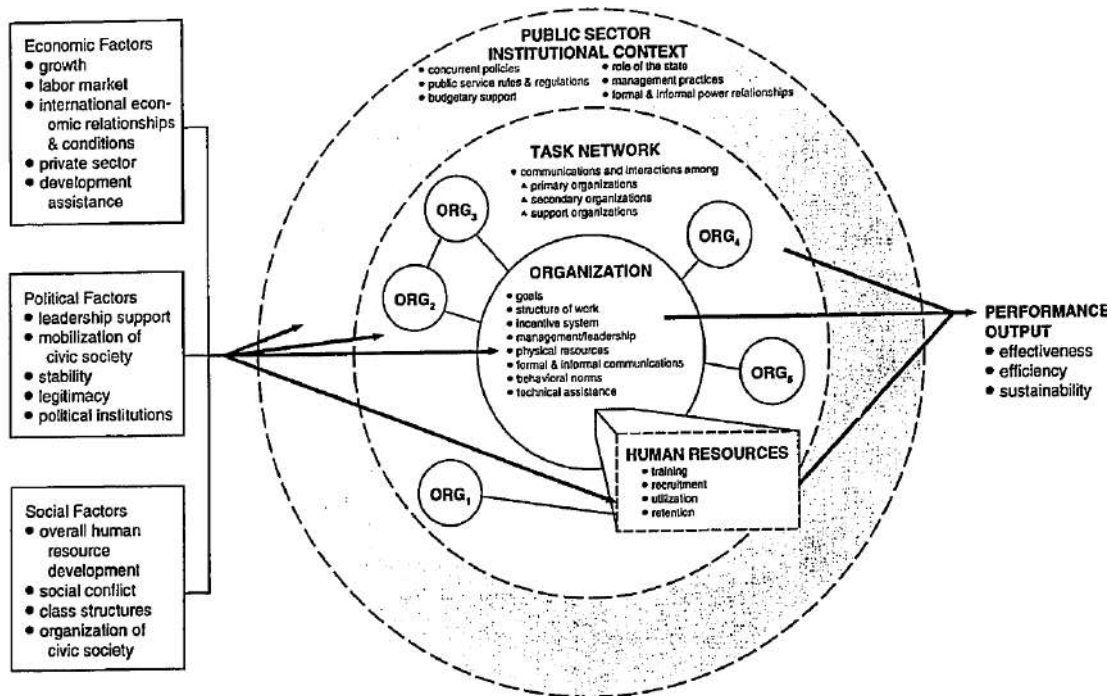


Figure 3: Grindle and Hilderbrand's dimensions of sustainable capacity in the public sector (1995, p. 6).

Christensen and Gazley (2008) provide the third and final framework considered as part of this QE (Figure 4). Here, organizational capacity is operationalized as a function of (1) organisational infrastructure, (2) human resources, (3) financial resources and management systems and (4) political and market characteristics of the external environment. Christensen and Gazley (2008) argue that their “relatively simple conceptual framework of capacity focusing on internal and external dimensions, comfortably captures capacity’s various uses across research fields” (p. 273).

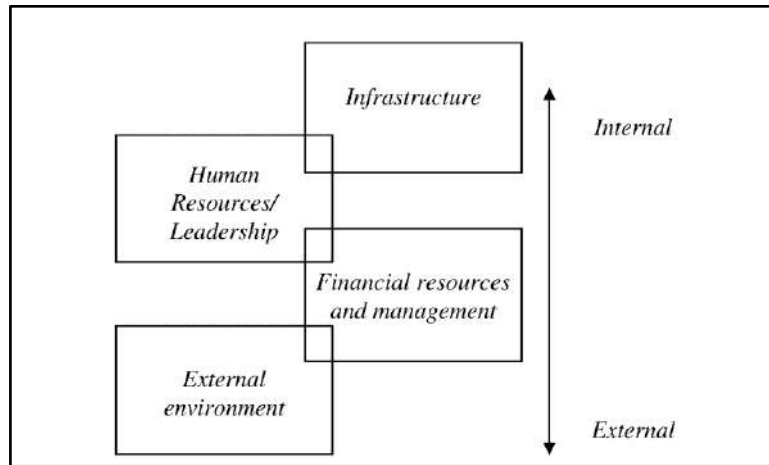


Figure 4: Christensen and Gazley's material and spatial dimensions of organizational capacity (2008, p. 268).

Part 3: Connecting agri-food systems planning and capacity

The third and final section of my QE builds upon Parts 1 and 2 and proposes a conceptual framework for municipal agri-food systems planning capacity. As was mentioned previously, this paper is premised by existing literature that argues:

1. Current agri-food systems have a number of shortcomings and are widely criticized for being unsustainable (Clapp & Moseley, 2020; FAO, 2021; Held, 2023; IPCC, 2023; Yasmeen, 2023);
2. Local and regional agri-food systems have an important role in transitioning to more sustainable agri-food systems (Blay-Palmer et al., 2016; Clapp & Moseley, 2020; Knezevic et al., 2017; Soma & Wakefield, 2011; Sumner, 2012); and
3. The planning profession has a role to play in supporting local and regional agri-food systems (Buchan et al., 2015; Hansen et al., 2020, 2021; Lang, 2014; Raja et al., 2008).

While there is well established interest in agri-food systems planning, it is less clear what capacity is needed to undertake this work (Caldwell et al., 2020, 2021; Soma & Wakefield, 2011; Zink et al., 2022). Research by Caldwell et al. (2021) defines municipal capacity as “the ability to use internal and external resources, available either formally or informally, at both government and greater community levels, to respond to emerging agricultural and agri-food issues effectively” (p. 248). This definition, along with the entirety of this QE, lay the foundation for my proposed framework of municipal agri-food systems planning capacity.

Conceptualizing agri-food systems planning capacity

Agri-food systems planning capacity is the ability to comprehend local and regional agri-food systems challenges and needs, make informed decisions about how to support and respond, and develop and implement supportive programs, policies, and plans (Brody et al., 2010; Honadle, 1981). Key characteristics of agri-food systems planning capacity include staffing and budgetary resources, agri-food systems knowledge and expertise, facilitation and collaboration, and a commitment to supporting local and regional agri-food systems. This conceptualization informs my proposed conceptual framework for municipal agri-food systems planning capacity.

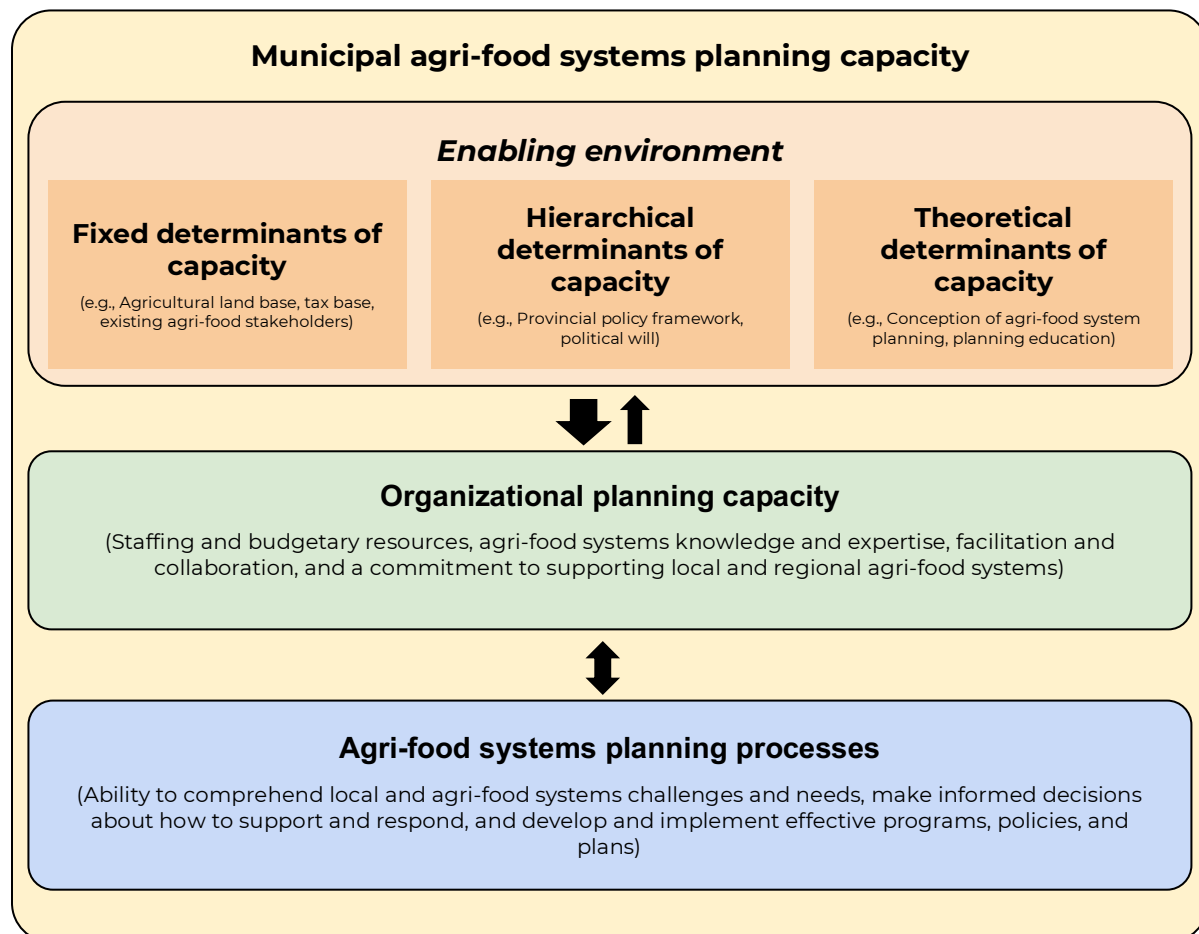


Figure 5: Proposed conceptual framework for municipal agri-food systems planning capacity.

Conceptual framework discussion

My proposed conceptual framework of municipal agri-food systems planning capacity (Figure 5) includes three components: the enabling environment, organizational planning capacity, and agri-food systems planning processes. These three components include aspects of all three levels of capacity (macro/institution, meso/organization, and micro/ individual). As Morgan (2005) suggested these levels are interrelated and agri-food systems planning capacity is conceptualized across multiple levels and draws on relationships with both internal and external actors.

The **enabling environment** largely speaks to the institutional framework in which municipal agri-food systems planning takes place, including provincial policy direction, political will, conceptual ideas around what agri-food systems planning encompasses, and landscape and population characteristics. The enabling environment is composed of a number of institutions that place constraints on agri-food systems planning and are generally difficult and slow to change.

Organizational planning capacity includes all of the components that contribute to a municipality's agri-food systems planning process. This includes the planning department resources and characteristics (staff, budget, departmental structure, knowledge of agri-food systems), as well as relationships with other municipal departments (interdepartmental collaboration), relationships with external actors (intergovernmental collaboration, conservation authorities, agri-food stakeholders), and commitment to local and regional agri-food systems.

Agri-food systems planning processes considers processes and outcomes associated with agri-food systems planning. Agri-food systems planning processes and outcomes include both regulatory and non-regulatory initiatives as well as on-going partnerships in support of agri-food systems planning.

Furthermore, the definition of food systems planning provided by the American Planning Association suggests six objectives:

(1) preserve existing and support new opportunities for local and regional urban and rural agriculture; (2) promote sustainable agriculture and food production practices; (3) support local and regional food value chains and related infrastructure involved in the processing, packaging, and distribution of food; (4) facilitate community food security, or equitable physical and economic access to safe, nutritious, culturally appropriate, and sustainably grown food at all times across a community, especially among vulnerable populations; (5) support and promote good nutrition and health; and (6) facilitate the reduction of solid food-related waste and develop or manage a reuse, recovery, recycling, and disposal system for food waste and related packaging. (n.d.)

The enabling environment, organizational planning capacity, and agri-food systems planning processes are connected by feedback loops. These relationships and their associated strengths are depicted using arrows of different sizes. For example, increased organizational planning capacity is hypothesized to lead to agri-food systems planning processes; Agri-food systems planning processes are understood to support local and regional agri-food systems which in turn creates a stronger case for agri-food systems planning at the organizational level. This is different from the relationship between the enabling environment and organizational planning capacity, where the enabling environment is much more difficult and slower to change and has a strong influence over organizational planning capacity (e.g., policy framework, planning department mandate).

Next steps

Municipalities are the most local level of government, and they play a critical role in supporting local and regional agri-food systems that are environmentally sustainable, economically viable, and supportive of local communities and context. Through land-use planning, economic development initiatives, and broader decision-making, municipal staff and councils have the ability to encourage or hinder agri-food

systems in their municipalities. However, little is known about municipal agri-food systems planning capacity and even less is known about how municipal capacity impacts local and regional agri-food systems. This QE paper lays the groundwork for my doctoral research which looks to test my proposed conceptual framework for municipal agri-food planning capacity in the Ontario context.

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Appendix G - List of Planning Boards in Northern Ontario

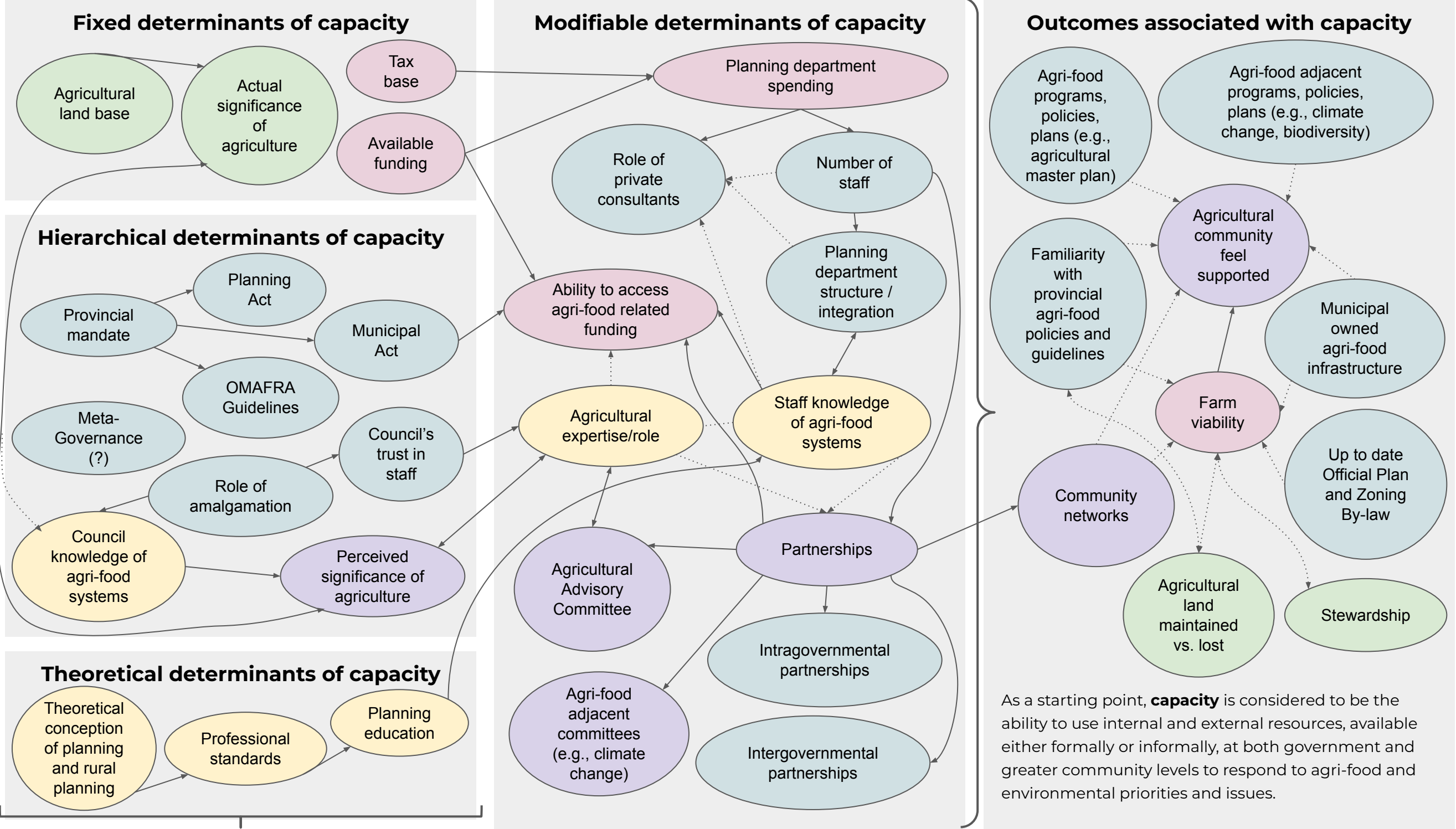
List of Planning Boards in Northern Ontario

Planning Board	Municipalities included	Unincorporated Territories Covered	District
Archipelago Area	The Archipelago	Blair, Brown, Harrison, Henvey, Mowat and Wallbridge	Parry Sound
Central Almaguin	Magnetawan, Strong Sundridge Joly Machar South River	Ballantyne and Paxton (portions west of Algonquin Park), Laurier and Lount.	Parry Sound
Cochrane & Suburban	Cochrane	portions of the geographic townships of Brower, Hanna, Kennedy and Fournier.	Cochrane
Hearst	Hearst Mattice-Val Côté	Casgrain, Hanlan, Kendall, Way & Lothar	Cochrane
Kapuskasing & District	Kapuskasing	Owens, Teetzel & O'Brien	Cochrane
Lakehead Rural	Conmee Gillies Neebing O'Connor Oliver Paipoonge	Gorham, Ware, and the Dawson Road Lots 1-20, Concession A & B, east of the Kaministiquia River	Thunder Bay
Manitoulin	Assiginack Billings Burpee & Mills Central Manitoulin Cockburn Island Gordon/Barrie Island Gore Bay Tehkummah	Robinson & Dawson	Manitoulin
North Almaguin	Powassan	Hardy, East Mills, Pringle, Patterson, Wilson & McConkey	Parry Sound
Sault Ste. Marie North	NA	Rix, Ryan, La Verendrye, Fenwick, Jarvis, Peever, Palmer, Ley, Vankoughnet, Anderson, Home, Herrick, Havilland, Deroche , Duncan, Slater, Fisher, Tupper, Hodgins, Kars, Smilsky, Tilley, Shields, Dennis, Nicolet, Kincaid, Archibald, Gaudette, Pennefather, Marne & Aweres	Algoma

Planning Board	Municipalities included	Unincorporated Territories Covered	District
Smooth Rock Falls	Smooth Rock Falls	Haggart (portion west of the Town of Smooth Rock Falls)	Cochrane
Sudbury East	French River Markstay-Warren St.Charles Killarney	Burwash, Cox, Davis, Hawley (except NE corner), Hendrie, Henry (except Conc. 1 & 2), Janes (west half), Laura, Loughrin (except Conc. 1 – 3), Secord, Servos, Street (east of the Wahnapiatae River) and Waldie	Sudbury
Desbarats to Echo Bay	Macdonald, Meredith and Aberdeen Additional Laird Tarbutt Johnson	NA	Algoma
East Nipissing	Papineau-Cameron Mattawan Calvin	NA	Nipissing
Central Timiskaming	Chamberlain Charlton and Dack Evanturel Englehart	NA	Timiskaming
Parry Sound Area	Carling Whitestone McKellar McDougall Parry Sound	NA	Parry Sound
Southeast Parry Sound	Ryerson McMurrich/Monteith Perry Kearney Burks Falls Armour	NA	Parry Sound
St. Joseph Island	Jocelyn Hilton Hilton Beach St. Joseph	NA	Algoma

Appendix H - Draft Systems Map of Agri-food Systems Planning Capacity (2021)

Municipal capacity to plan for and support agri-food systems - A conceptual understanding



Appendix I - Supplementary Literature Review

Literature Review - Planning for agri-food systems in Ontario

Prepared by: Natasha Gaudio Harrison and Regan Zink

Introduction

A thriving agricultural sector is critical to the health of local communities. It is imperative to food security and access, and it is an economic driver locally, provincially, and nationally. As of the 2021 Census of Agriculture, Ontario had the largest share of farmers and farm operators of any province, and it was the second largest contributor to the country's farm operating revenues at \$87 billion in total operating revenues (Statistics Canada, 2022). Ontario has some of the best farmland in Canada (soil class 1-3) and is home to over 48,000 farms producing over 200 commodities (Ontario Ministry of Agriculture, Food, and Rural Affairs, 2022).

The 2021 Census of Agriculture also showed that Ontario accounted for over one-quarter (25.5%) of total farms in Canada, while making up 7.7% of total farm area. Ontario is also a leader in many farming categories, including multiple livestock categories (chickens, goats, egg production), as well as crops like vegetable and melon and greenhouse, nursery and floriculture (Statistics Canada, 2022). Southern Ontario is also home to some of the most fertile agricultural lands in the country. The province contains 52% of Canada's Class 1 agricultural land (Caldwell et. al., 2017), defined as containing soils that have "no significant limitations in use for crops" (Agriculture and Agri-Food Canada, 2013). From large livestock operations with national supply chains, to small-scale community-supported agriculture, the sector's importance to Ontario's overall economy and community wellbeing cannot be understated.

Agriculture at all scales requires the support of local, regional, provincial, and federal governance structures and related policies that support the sector and food systems. Municipalities play an important role in agricultural governance, as the level of government with regulatory responsibilities related to farmland protection and agri-food systems planning at the local level. They are also positioned well to maintain relationships with local stakeholders in the space to respond to localized agricultural considerations and challenges in real time (Dring et. al., 2023).

In Ontario, there is a critical interplay between provincial policies and plans that govern land use, and local planners and municipal staff who are tasked with implementing these policies at the local level, with the support of municipal councils. Municipalities in Canada are creatures of the province in which they are located, which means all powers within municipal jurisdiction are granted to municipalities via provincial legislation. In Ontario, the Municipal Act, 2001, S.O. 2001 governs the powers, duties, and organizational structure of municipalities. The province governs land use considerations through the Planning Act R.S.O. 1990, c, P 13, which provides the basis for Ontario's land use planning system. Under the Planning Act, municipalities may

develop official plans, zoning by-laws, and make planning decisions that adhere to provincial legislation.

Under the Planning Act, the province develops land use policies and direction that often relate to agricultural lands and activity. These include the Provincial Policy Statement, Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan, and A Place to Grow: Growth Plan for the Greater Golden Horseshoe. At the municipal level, municipalities adopt official plans, pass by-laws, and develop budgets and expend funds to be consistent with and conform to provincial policies and initiatives, as well as respond to local needs and priorities.

The province also provides a number of additional guidelines, tools, and approaches specific to municipal responsibilities and services. Additional policy documents guide municipalities on matters specific to agriculture and agricultural planning, including the minimum distance separation formulae - a formula that enforces minimum distance between livestock facilities and residential uses to mitigate land use conflicts - the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA)'s Guidelines on Permitted Uses, Agricultural Systems Planning, the relationship between the Natural Heritage System and the Agricultural System, among others. Much of the direction from the provincial government to municipalities relates to prime agricultural areas, defined as areas with Class 1-3 lands as per the Canadian Land Inventory, specialty crop areas, a concentration of farming activity with Class 4-7 lands, or areas with organic soil (OMAFRA, 2022). It is worth noting that designated prime agricultural areas are important, yet make up only 5% of Ontario's total land base. In areas without prime agricultural lands, municipalities often support agriculture and agri-food systems through other activities, including economic development initiatives that support farm businesses, including leading agri-tourism campaigns, supporting urban agriculture or community gardening, and others. Other activities that municipalities undertake in support of agri-food systems could include creating an agri-food or food systems strategy, building relationships with agri-food system stakeholders and providing resources to municipal advisory groups (e.g., Agricultural advisory committees, food systems working groups), environmental stewardship initiatives, and investing in agri-food systems infrastructure and services. Buchan et. al., (2015) suggest a series of policy frameworks, roles, and tools that local governments can take to support local food systems and production. Pulling from primarily examples from British Columbia with acknowledgement that legislation may vary among provinces, they suggest that municipalities may provide resources to external partners (e.g. funds), undertake food-related projects and programs, advocating and facilitating agri-food systems, and regulate and establish policy that supports food systems. In addition, Zink et. al., (2022) found through a review of the literature on agri-food systems as a municipal priority that planners can play a role in plan making and design, coordination, monitoring and evaluation, information generation and dissemination, creating space,

empowering, and listening to sector stakeholders, and challenging planning culture and tradition.

Grey literature - Planning framework in Ontario

In Ontario, there are a number of provincial policies and guidelines that municipal planners are required to implement that relate to the agricultural sector and land use. This section will provide an overview of those relevant policies and the opportunities they present to municipalities to be engaged in agricultural issues. This provides a background and context for understanding the ways that planners interact with the agri-food sector in Ontario.

Provincial Document	Purpose and Implications for Municipal Planners & Agriculture
Provincial Policy Statement (PPS), 2024	The PPS is a consolidated statement of government policies on land use planning in Ontario. The first PPS came into effect in 1996, and the current inforce PPS came into effect 2024. Section 4.3 deals with Agriculture. The PPS, 2024 requires that planning authorities use an agricultural systems approach to maintain and enhance a geographically continuous agricultural land base and support and foster the long-term economic prosperity and productive capacity of the agri-food network. The PPS also notes that <i>Prime agricultural areas</i> shall be protected for long-term use for agriculture, permitting agricultural and agricultural-related uses, and on-farm diversified uses. Lot creation for uses other than agricultural use are discouraged with minimal exceptions (e.g. surplus farm dwelling severances), as is removal of prime agricultural lands for any reason other than settlement area expansion. There are a number of other policies related to agriculture which aim to protect prime agricultural areas. The PPS also encourages planning authorities to support local food, facilitate near-urban and urban agriculture, and foster a robust agri-food network.
Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe, 2020	The agricultural systems approach, requires planning authorities to consider both the agricultural land base and agri-food network. The purpose of the Agricultural systems planning approach evolved to protect the agricultural system in Ontario, especially in rapidly urbanizing regions like the Greater Golden Horseshoe. The systems approach treats the agricultural sector as an agri-food network, incorporating economic development considerations to protect the viability of the agri-food sector and maintain linkages between farmland and value-chain activity (i.e. abattoirs, grain mills).
Minimum Distance Separation (MDS) and Formulae, 2016	The purpose of MDS is to minimize land use conflicts between agricultural and non agricultural land uses, such as residential dwellings in the rural landscape. It provides a formula to calculate setback requirements between residential uses and <i>livestock facilities</i> and <i>anaerobic digesters</i> to ensure odor and/or noise nuisances are mitigated. Provincial direction related to separating livestock operations from other sensitive land uses can be traced back to the 19070s and the first iteration of MDS was included as part of the Agricultural Code of Practice that was published in 1976.
<i>Draft Agricultural Impact Assessment</i>	The purpose of AIAs is to provide a framework to consider the impact of different types of development on agricultural lands. The PPS, in addition to provincial plans (e.g.,

<i>Guidance Document (AIA), 2018</i>	Greenbelt Plan, 2017, Oak Ridges Moraine Conservation Plan, 2017 and Niagara Escarpment Plan, 2017) include policies that require AIAs for certain types of development that may impact the agricultural system. These include settlement area boundary expansions, infrastructure projects, mineral aggregate operations, and other non-agricultural uses within prime agricultural areas.
<i>Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas, 2014</i>	The <i>Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas</i> (2014) helps municipal planners interpret the policies in the PPS on permitted uses in <i>prime agricultural areas</i> . On-Farm Diversified Uses (OFDU) were identified in the 2014 PPS as one of the three permitted uses in <i>Prime Agricultural</i> areas. OFDU are meant to permit value-added agricultural operations that support the viability of the agricultural sector (e.g. wineries, agri-tourism, recreational). Municipalities implement OFDU policies through Official Plans, Zoning By-laws, and other municipal planning procedures.
The Farming and Food Production Protection Act (FFPPA), 1998	The FFPPA protects farmers from liability due to nuisance complaints (due to smells, noise, traffic) by neighbours. It recognizes "normal farm practices" as activities carried out as part of agricultural operators. Normal farm practices are relieved from adherence to municipal by-laws that would otherwise restrict those activities.

Topics in Agri-Food Systems Planning in Ontario

There are a series of contemporary issues that face Ontario's agricultural sector that impact municipal planners' responses to the sector. Some are the result of changing policy and industry trends, such as cannabis production and farmland loss, while others are related to demographic and economic trends, such as farm business succession and the industry's aging demographics, as well as access to land. Climate change is pervasive and its impacts are felt throughout the agricultural industry, and it presents a series of challenges at the municipal level.

In 2021, Caldwell et. al. found that the most frequently noted issue by land use planners in the Greenbelt region of Ontario was land use concerns around cannabis production. The production of cannabis in Ontario increased in 2018 following the federal Bill C-45, the Cannabis Act, which regulates the possession, production, distribution and sale of industrial hemp and cannabis in Canada. As of 2022, Ontario had 249 active industrial hemp licenses, and there were 227.50 hectares dedicated to its cultivation (Health Canada, 2023). At the municipal planning level, the findings from Caldwell et. al., in 2021 found that there was limited clarity for municipalities on location, operation, and regulation. As it is not a food product, there has been confusion around whether its production belongs in industrial areas or prime agricultural areas, or even specialty crop areas.

Farmland Loss

Caldwell et. al., (2021) found that the second most common issue facing municipal planners in Ontario's Greenbelt region was development pressure. The authors note that population

growth, land speculation, and urban boundary expansion are all issues that contribute to the threat of farmland loss. There is a perception in especially populous areas that agricultural land is vacant land waiting for urban development to arrive. In the context of a national housing shortage, this development pressure is significant. In 2023, the provincial government controversially sought to remove certain lands from the Greenbelt region to accommodate for increased housing development in the Greater Toronto Area, but ultimately reversed that decision (Balintec, 2023). The Ontario Federation of Agriculture, the member-based advocacy organization that represents the majority of Ontario's farm industry, strongly opposed the removal of agricultural lands advocating for "a holistic, systematic, province-wide approach [to address housing supply] that prioritizes protecting agricultural lands" (Ontario Federation of Agriculture, 2022). Epp and Caldwell (2018) introduce a method for measuring farmland loss that tracks the approval of municipal planning decisions in a way that foretells the conversion of farmland into other uses. They argue that the loss of farmland in Ontario occurs when an official plan amendment is approved, rather than once new development occurs. This argument is evidence that municipal planners are critical to farmland protection.

Aging Demographics and Succession Planning

As of the 2021 Census of Agriculture, the average age of Ontario's farm operators was 56.7, an increase of 1.4 years from the previous census. Older farm operators - those aged 55 or older - increased by 8.1% over the two census periods, suggesting that farms are remaining within the possession of an aging population (OMAFRA, 2022). While there was an increase in farmers reporting a succession plan between 2016 and 2021 (12.4% of farms reported a succession plan, versus 8.5% in 2016), those with a succession plan of Ontario's total farm operators remains a minority (OMAFRA, 2022). Taken together, the aging population of farm operators in Ontario combined with minimal succession plans reported suggests that succession planning is an emerging need and issue for Ontario's agricultural industry.

While the actions of agricultural industry players are largely outside of municipal influence, there is evidence of Ontario municipalities supporting succession planning through economic development functions. In 2023, Huron County hosted an event with a specialist in farm succession and developed a series of resources to support farm families in planning for farm business succession (County of Huron, 2023).

Climate Change

There are few clear directives from upper-levels of government for Ontario's municipal planners on how to respond to climate change. As Caldwell et. al. (2021) found, some municipalities have implemented programs that respond to the effects of climate change, such as water quality programs and climate change strategies and some have not. The Federation of Canadian Municipalities, through federally dispersed funds, manages a series of programs that

municipalities may leverage to respond to and plan for climate change, these include Partners for Climate Protection, the Municipalities for Climate Innovation Program, and the Green Municipal Fund. Municipalities are not mandated to pursue these programs.

Some upper-tier municipalities, such as Durham Region, have implemented climate adaptation strategies that are specific to the agricultural sector (see Growing Resilience: Durham Region Agriculture Sector Climate Adaptation Strategy, 2019). While these initiatives are voluntary for municipalities to opt-in, there is ample evidence that rural communities and their municipal planners must account for climate change and its impacts on agriculture as it is a key threat to agricultural production, food security, and overall rural economies (Dring et. al., 2023; Bi & Parton, 2008; Dasgupta et al., 2014).

Academic Literature

A pilot study completed by Caldwell et al. (2021) examined municipalities' capacity to support agriculture in Ontario's Greenbelt Region. The Greenbelt is a peri-urban region that is home to some of the most valuable agricultural land in Canada. Municipalities in this region play an important role in balancing the need to preserve the agricultural land base with urban development pressures. Through the pilot study 66 upper-, single- and lower-tier municipalities were analyzed for their internal capacity (staff numbers and expertise, budgets, experience with agricultural issues, etc.). The pilot study identified a number of factors limiting municipal capacity to support and respond to the agri-food sector, including inconsistent staff resources and budgets, expanding mandates, varying relationships with the agriculture community, and accessing relevant tools and/or training for agricultural and rural planning (Caldwell et al., 2021). The pilot study also identified ten opportunities to enhance municipal capacity to support agriculture, which included: increasing municipal collaboration, bridging academia and planning practice, planning for institutional memory, intergovernmental collaboration, professional development, awareness of the agricultural sector beyond planning staff, utilizing the Ontario Professional Planners Institute's resources and leadership, better inclusion of farmers in the planning process, recognizing the agri-food system, and finally, conducting internal reviews of capacity (Caldwell et al. 2021).

Canadian literature

A study completed by Davidson (1988) provides some context to the varied efforts of municipalities. His research focused on thirteen upper-tier planning departments in Ontario and revealed two major challenges impacting planning at the upper-tier level. Municipal planners had expanding mandates and responsibilities, with limited resources to meet them. Second, there were often inter-municipal jurisdictional challenges between upper- and lower-tier municipalities. That study also identified several other issues impacting planners working in upper-tier municipalities. These included: outdated plans; a lack of focus brought to

non-physical planning; the relationship between local needs to provincial legislation; staffing numbers at the upper-tier and lower-tier; municipal restructuring; opportunities to diversify the significance of planning as it matters to rural communities and rural economic development; and the presence or absence of a planning department, as well as their associated budgets. Davidson's observations were applied to the municipal planning function overall. These issues are further complicated when applied to the complexities in the agricultural sector. Ontario's municipalities and their planning departments continue to possess varying levels of capacity, and many trends identified in Davidson's research persist. These trends suggest that municipalities' ability to deliver on critical planning mandates is contingent on the capacity of planning functions. While Davidson's study did not focus specifically on municipal planning for agriculture, it provides context for the system in which municipal planners operate, and some of the challenges and opportunities to respond to and support the agricultural sector.

Applying an agri-food systems lens to planning, Hansen et. al. (2021) surveyed planners and practitioners across Canada to understand the state of food systems planning. The authors found that knowledge of food systems planning is limited within the profession, education and professional development in this topic is limited, there is limited clarity over jurisdictional responsibility over food systems issues. They note that a lack of racial diversity limits how food systems are understood, and that food systems planning is perceived as a rural issue rather than an urban one. Hansen et. al., (2020) suggest three directions for food systems planning that may address some of the persistent challenges. They suggest that while planning capacity for food systems has seen progress in the past two decades - evidenced by an increase in municipal strategies for food systems and agriculture, and the existence of the first Food Policy for Canada (Agriculture and Agri-Food Canada, 2019) - there are limits to the capacity of the planning profession to plan for agri-food systems. Their three directions call for comprehensive policy to plan across the food system, including addressing poverty reduction, job creation, infrastructure and local food procurement; collaborative planning across local government boundaries, taking a regional approach; and multi-dimensional food system data collection, which calls for enhanced food system metrics that track things like food assets, social determinants of health, access to food retail, among others.

In the Southern Ontario context, Epp's (2018) paper explores the importance of strong relationships between municipalities and the agricultural community. Her study of Agricultural Advisory Committees notes the potential for innovative and responsive planning practices that help balance the interests of agricultural land preservation with development pressure in southern Ontario.

A recent study from British Columbia looks at the role of municipalities in supporting and governing agricultural systems. Dring et al. (2023) discuss the governability of agricultural systems using Metro Vancouver as a case study. Agricultural systems are diverse, complex, and

dynamic, and they operate at multiple scales. While all three levels of government influence the sector, they conclude that municipalities play an important role in governing the sector. This is because of their function in regulating land use and coordinating local policies and bylaws with other levels of government. They also note the prevalence of economic development priorities and agriculture; “demonstrating an economic rationale for a strong municipal role in supporting the business of farming” (p. 14). Interestingly, Dring et al., argue that for complex agricultural systems to be legible for municipal intervention they must be simplified, and go on to question which agricultural players are privileged by the existing governing systems. For example, are large, industrial agricultural producers privileged by the existing governance systems, thereby disadvantaging smaller-scale producers? Ultimately, their conclusions support the limited existing literature that suggests that municipal governments and their administrations maintain a crucial role in supporting and maintaining the agricultural sector despite the nuanced challenges that exist in different regions.

International literature

In the United States, the role of local planners in supporting agriculture and maintaining the agricultural land base is similar. Pothukuchi and Kaufman (2000) explored the role of the planning profession as it relates to the food system. They conducted a survey focusing on the planners’ level of involvement in the food system issues to determine the level of attention that the planning profession dedicates to food systems in 22 U.S. cities. The determining factors included key resources such as knowledge and funding. They also found that there was a perception among planners that food policy is non-urban leading to a low level of involvement in food system issues. The results of their study found that planners did not get involved in food issues unless it was a land-use issue, and that food system issues were “low on the agenda of practicing planners” (Pothukuchi and Kaufman, 2000, p. 121).

Dilleuth (2017) identifies a series of policies and actions that local governments can take to protect the agricultural land base and support the sector in the American planning context. These include integrating farmland protection into comprehensive plans as well as creating protection plans, integrating farmland protection into local by-laws, striking agricultural task forces (similar to advisory committees) and growth management that mitigates farmland loss.

In all cases noted in the States, political will, public support, and staff and financial resources are crucial to the capacity of local planners to support agri-food systems (Daniels, 2019; Daniels & Payne-Riley, 2017). Larson et. al.’s (2017) findings on government capacity to respond to environmental change in New York State echo many of the findings related to agriculture. They note the importance of economic and human resources, political buy-in, collaboration, and public trust in governments as critical to responding to environmental change.

A study of commonwealth countries by Caldwell and Lang (2014) found commonalities among these jurisdictions in planning for agriculture and food security. They note that climate change, farmland preservation, land and water management sustainability and land use conflicts associated with land use change are all key issues planners face. In the Australian context, Budge and Butt (2017) note the importance of enhanced relationships between farmers and planners to highlight the industry and the need to preserve agricultural land.

There are several studies that explore local planning and its relationship to agri-food systems in various European contexts. Doernberg et. al., (2019) investigated policy tools and instruments applied to food system issues in ten German city-regions. Their findings were similar to many found in Canadian and North American research. They note that across regions studied, food-system specific plans and strategies were in their infancy, and that the “influence of municipalities is still rather limited for many food system domains, such as agriculture,” (p. 10) and that strong political commitment and resources will be required to further enhance capacity for food systems.

In Sweden, Granvik (2012) interviewed representatives from 218 Swedish municipalities and reviewed local level planning documents to understand the level to which issues of local food are considered a factor in municipal planning. Their study’s findings showed a range of perspectives on the definition of “local food” among consumers, along with a growing interest in local food procurement among Swedish local authorities. However, they note that the “the food system in a Swedish planning perspective has a tradition of being less visible than other urban systems such as housing, transportation and services” (p. 122).

In Italy, Milan’s Urban Food Policy Pact (MUFPP) (2015) notes social networks, communication and city-to-city collaboration as tools to enhance municipal capacity to support agri-food systems. The MUFPP recognizes the development of urban food systems at the local and global level as a tactic for climate change mitigation (Sonnino. Et al, 2019).

An interesting case study of a peri-urban region in the Netherlands, Oosterwold, supports the idea that enhanced capacity is required to plan for agriculture. Oosterwold had previously been home to approximately 3400 of conventional farmland that supplied crops to world markets. Oosterwold is a planned community that arose due to the dire need for housing on the outskirts of neighbouring city, Almere. The planning approach to Oosterwold formally incorporated residents as planning “practitioners” that are required to organize and have direct influence over development of roads, housing, and other amenities. It was also planned to integrate rather than segregate agriculture from residential areas by requiring 51% of land in the community be devoted to agriculture on individually owned plots. The residents as planning “practitioners” have over time influenced the definition of agriculture in Oosterwold, and have “stretched the capacity” of planning practices in the Netherlands, in this case suggesting challenged, or expanded, capacity (Jansma & Wertheim-Heck, 2022). While the practices in this

case study are a notable divergence from those found in Ontario, it illustrates a possibility for expanding capacity to support and respond to agricultural issues and the importance of maintaining close relationships with agricultural producers.

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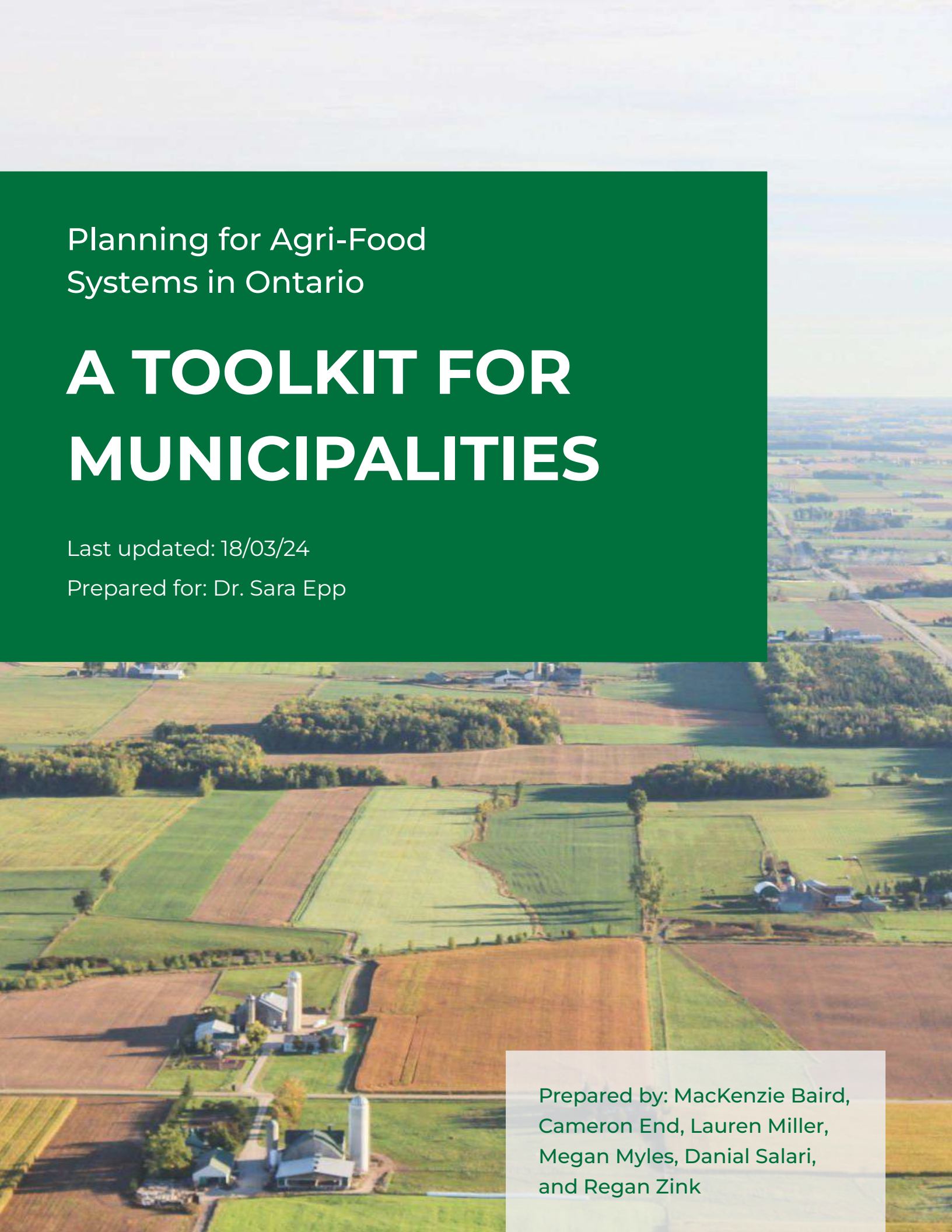
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Appendix J - Planning for Agri-Food Systems in Ontario: A Toolkit For Municipalities



Planning for Agri-Food
Systems in Ontario

A TOOLKIT FOR MUNICIPALITIES

Last updated: 18/03/24

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Land Acknowledgement

The University of Guelph is located within the Between the Lakes Purchase (Treaty 3); the treaty lands and territory of the Mississaugas of the Credit. The University of Guelph recognizes that the Anishinnabe and Hodinöhsö:ni' peoples have unique, long-standing and on-going relationships with the land and each other and that the Attawandaron people are part of the archaeological record.

As rural planning students and future professionals in a field fundamentally concerned with land and peoples, we have a responsibility to learn more about the original inhabitants of the land, the treaties that exist, and our role in addressing the 94 Calls to Action of the Truth and Reconciliation Commission of Canada. Furthermore, agri-food systems planning is inherently land and community-based work. The Dish with One Spoon Wampum offers important teachings and guidance about the importance of reciprocity and the responsibility we have to take care of the land as it is a shared resource on which we all depend.

To Learn More

If you have any questions about this toolkit or would like to learn more about the associated research, please contact Dr. Sara Epp at sepp@uoguelph.ca or Dr. Wayne Caldwell at wcaldwel@uoguelph.ca.

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Appendices

Appendix A - Agri-Food System Planning Resource Directory

Appendix B - Relevant Definitions from the PPS

Appendix C - Agri-Food Systems Planning in the Literature

DRAFT

1.0 Introduction

In the face of increasing volatility and instability, local and regional agri-food systems play an important role in safeguarding community resilience and well-being. Local and regional agri-food systems are closer to home, less susceptible to global disruption, and contribute to local autonomy. Globally, agri-food systems are facing several challenges including extreme weather events, changing climate, the introduction of new diseases, changing practices, land grabbing, development pressures, labour shortages, and disrupted supply chains, among others. Governments at all levels play an important role in responding to and addressing these challenges, in addition to providing support for sustainable transitions in the agri-food sector.

Municipal governments in Ontario play a key role in agri-food systems planning. Through land-use planning, economic development, and broader decision making, municipalities have the ability to encourage or hinder agri-food systems in their communities. Furthermore, food sovereignty and food security are closely tied to local food systems, underscoring the importance of understanding local food availability and existing policies and regulations aimed at increasing access to it. While the provincial government provides a policy framework, local governments have the ability to determine how best to implement policies in their jurisdiction and have the ability to go beyond provincial mandates. This flexibility allows local governments to pursue policies, programs, and plans to support and respond to the agri-food sector.

This toolkit, developed as part of the final assignment for the RPD6410 course instructed by Dr. Sara Epp at the University of Guelph, aims to provide support for municipalities undertaking agri-food systems planning work. Geared toward municipal planning staff and councils the toolkit provides an overview of agri-food systems planning policy in Ontario, a resource directory, actions municipalities can take in support of agri-food systems, and a number of relevant case studies and examples. Recognizing the multitude of actions that are part of agri-food systems planning, this toolkit focuses on ten actions and related initiatives that municipalities can take to support sustainable agri-food systems. In addition to utilizing this toolkit, municipal planning staff and councils are encouraged to familiarize themselves with the agri-food sector in Ontario, as well as relevant provincial and federal agriculture and agri-food legislation.

1.1 Agriculture in Ontario

Home to just over a quarter of the nation's farms, Ontario plays an important role in Canada's food system (Chen, 2022). Ontario's growing climate paired with highly productive soils (including 52% of Canada's Class 1 land) uniquely positions the province's agri-food sector as one of the largest and most diverse in Canada (Caldwell & Hitts, 2005; Caldwell et al., 2017; OMAFRA, 2022).

Ontario leads the nation in several commodities, including soybeans (accounting for 54.4% of the country's total crop area), corn (59.9%), and greenhouse products (61.8%) (Statistics Canada, 2021). Furthermore, Ontario's agri-food sector contributes over \$47 billion to provincial GDP and \$19.6 billion in agri-food exports (OMAFRA, 2022). Beyond economic contributions, Ontario's agri-food sector is diverse with more than 4,500 food and beverage manufacturing businesses, 48,000 farms, and 200 different food and farm commodities (OMAFRA, 2022).

Despite the significance of Ontario's agri-food sector, both the number of farms and the total farm area declined between 2016 and 2021 (by 2.5% and 4.7% respectively) (Statistics Canada, 2021). From 2015 to 2020, the number of large farms (farms exceeding \$1 million in annual revenue) increased by 19.2%, a trend that is likely explained by farm consolidation (Statistics Canada, 2021). Furthermore, the number of young farmers (under 35) and middle-aged farmers (35 to 54) decreased between 2016 and 2021 (by 15% and 20.9% respectively), and farm operators over age 55 increased by 8.1% (Chen, 2022). Since 1991, there has been nearly a 75% decrease in young farmers who now only make up less than 10% of Ontario farmers (Jensen et al., 2023). These shifts in demographics paired with the increased number of large farms pose emerging challenges to Ontario's agricultural sector.

1.2 How to Use This Toolkit

Municipalities play an important role in responding to and addressing these challenges, in addition to providing support for sustainable transitions in the agri-food sector. This toolkit is designed to be used by municipal staff and councils working on agri-food systems planning initiatives. While the toolkit was prepared from a land use planning perspective, the content and recommendations have broad applicability to anyone undertaking local and regional agri-food systems planning work. More specifically, this toolkit encompasses consideration for economic development, environmental stewardship, and climate change perspectives and initiatives.

The toolkit begins with a summary of the provincial policy framework that guides agri-food systems planning Ontario, including discussion of the agricultural systems approach, prime agricultural lands, and permitted uses. This is followed by a discussion of the role of municipalities, looking specifically at innovative official plan and zoning by-law policies, partnerships between planning and economic development departments, and environmental stewardships efforts. The next section of the toolkit provides a resource directory including guidance documents, data sources, networks, contacts, and existing toolkits from other jurisdictions relevant to agri-food systems planning in Ontario. This is followed by ten actions municipalities can take to effectively support and respond to the agri-food sector. The final section of the toolkit provides a selection of case studies which highlight the wide-array of policies, programs, and plans that municipal governments are pursuing related to agri-food systems planning.

As you make your way through the tool it may be helpful to reflect on the following:

- **Evaluation** – Municipalities should assess the agri-food sector within their jurisdiction to better understand strengths, weaknesses, challenges, and opportunities.
- **Education** – Case studies and additional resources provided in this toolkit can help to gain a comprehensive understanding of agri-food systems and relevant policy considerations.
- **Policy Development** – Consider how the different policy approaches discussed throughout this toolkit may apply or be adapted to your municipality.
- **Implementation** – By tailoring strategies to the unique circumstances of your municipality, agri-food initiatives can better address and respond to the community. Tools and case studies are available to help with this.
- **Participation** – Agri-food systems involve a wide array of stakeholders, consultation is key to effective design, implementation, and uptake of municipal agri-food systems planning initiatives.

2.0 How Agri-Food Systems Planning is Governed

Understanding agri-food systems planning in Ontario begins with understanding the legislative framework. Under Canada's federal system of government, land-use planning is considered a provincial responsibility, and in Ontario the Province largely transfers the responsibility of administering and regulating land use planning to municipalities (Ministry of Municipal Affairs and Housing, 2023). The Ministry of Municipal Affairs and Housing is the provincial ministry responsible for planning policy. However, other ministries such as the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) also provide guidance on matters related to land-use planning. It should also be noted that the federal government also plays a role in agriculture and agri-food systems governance more broadly. Agriculture and Agri-Food Canada (AAFC) is involved in coordinating agricultural policy at the national level, leading key initiatives, and administering legislation and regulations governing the food system (Food Policy for Canada, 2024).

In Ontario, the Municipal Act, R.S.O. 2003 is the provincial legislation that creates and distributes authority and duties to the 444 municipalities (AMO, 2023). The Planning Act, R.S.O. 1990 specifically sets out the ground rules for land use planning, including how land uses are controlled and who controls them, a responsibility which mostly falls to municipalities (Ministry of Municipal Affairs and Housing, 2023). According to the Planning Act, planning authorities, namely municipalities, "shall have regard to matters of provincial interest", which includes "protection of agricultural resources" (Planning Act, RSO 1990, s. 2). This legislation authorizes several planning tools, such as provincial policy statements, provincial plans, and municipal official plans and zoning by-laws, which make up Ontario's Planning Framework as shown in Figure 1.

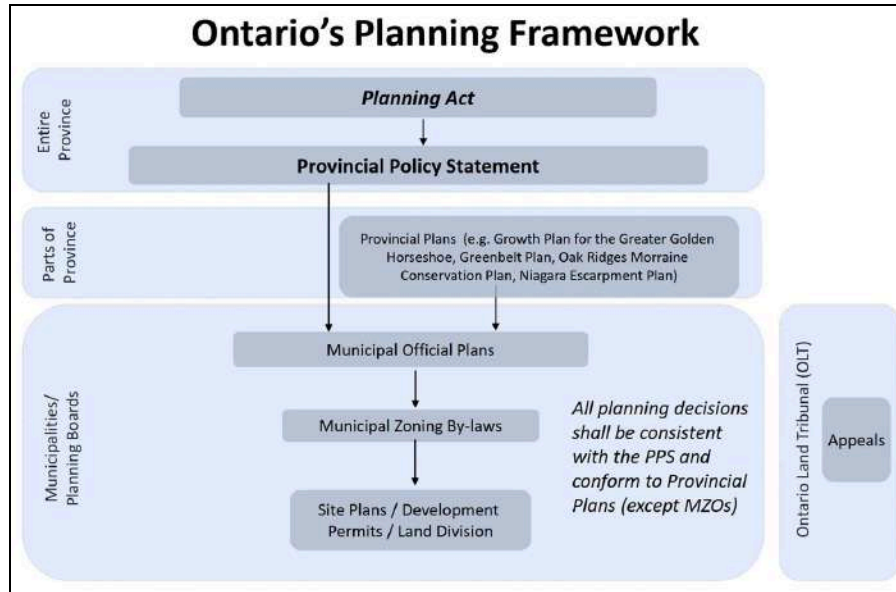


Figure 1 – Ontario Planning Framework (Boyd, 2024).

2.1 Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS) provides the policy foundation for land use planning and development and was created to protect matters of provincial interests. Section 2.3 of the PPS recognizes prime agricultural land as one of Ontario's finite resources and states that, "prime agricultural areas shall be protected for long-term use for agriculture." Section 2.3 of the PPS also discourages lot creation to prevent farmland fragmentation, specifies permitted agricultural and non-agricultural uses, and only allows planning authorities to remove land from prime agricultural areas only at a time of a comprehensive review. In addition to providing guidance related to prime agricultural lands, the PPS also includes policies relevant to the agricultural system and permitted uses.

Agricultural System

The agricultural systems approach builds off the understanding that for the agri-food sector to be prosperous, both agricultural land and supporting land uses must be considered and planned for. According to the PPS, an "agricultural system consists of: 1) an agricultural land base of prime agricultural areas, including specialty crop areas, and rural lands; and 2) an agri-food network which includes infrastructure and transportation networks, agricultural services, farm markets, distributors, primary processing, and assets important to the viability of the agri-food sector (PPS, 2020, s.6).

Prime Agricultural Land and Permitted Uses

The PPS stipulates that prime agricultural lands must be used only for agricultural uses, agriculture-related uses, and on-farm diversified uses. It defines prime agricultural land as specialty crop areas and/or Canada Land Inventory Class 1, 2, and 3 lands, and prime agricultural areas as being where the above lands predominate.

OMAFRA's Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas introduced on-farm diversified uses (OFDUs) as "uses secondary to the principal agricultural use of the property and are limited in area" (Geerts, 2016; MMAH, 2020, s.6), which are permitted on prime agricultural areas (MMAH, 2020, s.2.3.3.1). OFDUs allow for additional on-farm revenue streams to support agricultural viability, which in turn preserves farmland. To help municipalities interpret and operationalize this provincial guidance, Caldwell et al. (2022) present "Five Tests of an OFDU" Pre-Consultation Compatibility Tool, which identifies the following tests: 1) Located on a farm; 2) Secondary to the principal agricultural use of the property; 3) Limited in area; 4) Includes, but is not limited to, home occupations, home industries, agri-tourism uses and uses that produce value-added agricultural products; and, 5) Shall be compatible with, and shall not hinder, surrounding agricultural operations.

Minimum Distance Separation (MDS)

The PPS also mandates compliance with the "minimum distance separation formulae" (MDS) meaning setbacks developed by the Province to reduce incompatibility concerns associated with odour from livestock facilities. MDS-I applies to new residential uses, including lot creation, rezonings or re-designations, and building permits. MDS-II applies to the construction of a first or altered livestock facility occupying an area greater than 10 square metres or any anaerobic digester (Crinklaw, Turvey, & Ward, 2016).

2.2 Provincial Plans

In addition to the PPS, four provincial plans identify specific land use designations, including prime agricultural land, in the Greater Golden Horseshoe (GGH). As one of the fastest growing regions of North America, the GGH is an area of particular interest because while it only consists of 3.5% of Ontario's land base, it is home to 70% of Ontario's population and 42% of Ontario's best (Class 1) agricultural land (Geerts & Churchyard, 2020). Therefore, these more specific plans apply only to a defined land base and help plan for development in a way that promotes environmental

preservation, economic prosperity, and good standards of living in local communities (MMAH, 2020). The four provincial plans relevant to the GGH are: 1) [A Place to Grow: Growth Plan for the Greater Golden Horseshoe](#) (Places to Grow Act, 2005), 2) [Greenbelt Plan](#) (s. 3 of the Greenbelt Act, 2005), 3) [Niagara Escarpment Plan](#) (Niagara Escarpment Planning and Development Act), and 4) [Oak Ridges Moraine Conservation Plan](#) (Oak Ridges Moraine Conservation Act, 2001).

Agricultural Impact Assessments (AIAs)

In GGH plan areas, agricultural impact assessments (AIAs) may be required. An AIA evaluates the potential impacts of non-agricultural development on agricultural operations and the Agricultural System and recommends ways to avoid or, if avoidance is not possible, minimize and mitigate adverse impacts (OMAFRA, 2018). Outside GGH plan areas, AIAs are not required by provincial legislation but may be another tool that municipalities can use for farmland preservation.

2.3 Relevant Agri-Food Legislation & Policy

In addition to the legislation, plans, and policies discussed above, Table 1 identifies a number of laws and regulations that affect how the agri-food industry is governed in Ontario. A list of provincial policy guidance and resource documents is included in Appendix A.

Table 1 - Relevant Agri-Food System Planning Legislation & Policy <i>(Note: This table is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)</i>	
Legislation / Policy	Purpose
Municipal Act, 2001, S.O. 2001	Governs the extent of powers and duties, organization and structure of municipalities.
Planning Act, R.S.O. 1990	Identifies the processes and responsibilities for land use planning, including authorizing the Provincial Policy Statement, Provincial Plans, and Municipal Official Plans and Zoning Bylaws.
Provincial Policy Statement, 2020	Defines planning policy direction including protection of prime agricultural lands, areas, and specialty crop areas.
Greenbelt Plan, 2017	To protect prime agricultural lands, natural heritage, and water resources and preserve biodiversity in designated areas across the province.
Oak Ridges Moraine Conservation Plan, 2017	To safeguard the ecological integrity and hydrological functions of the Oak Ridges Moraine while guiding land use planning and development in a sustainable manner.

Table 1 - Relevant Agri-Food System Planning Legislation & Policy (Continued)

(Note: This table is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)

Legislation / Policy	Purpose
Niagara Escarpment Plan, 2017	To conserve and manage the natural environment, cultural heritage, and scenic beauty of the Niagara Escarpment while promoting sustainable land use and development practices for seven land use designations including natural, protection, rural, recreation, urban, minor urban, and mineral resource extraction.
Growth Plan for the Greater Golden Horseshoe, 2020	To manage growth, protect natural areas, and promote sustainable development within the region surrounding the western end of Lake Ontario for the benefit of present and future generations.
Drainage Act, R.S.O. 1990	Defines different types of drainage works and associated processes and responsibilities.
Farm Implements Act, R.S.O. 1990	Serves to improve farm machinery safety and protect the large investments that farmers and dealers make when purchasing or leasing farm machinery.
Nutrient Management Act, 2002	To guide the management of nutrients including fertilizer, manure, compost, sewage biosolids and pulp and paper biosolids in ways that will enhance environmental protection and make agricultural operations more sustainable.
Farming and Food Production Protection Act, 1998	Provides a conflict resolution process for neighbour conflicts, including authority for the Normal Farm Practices Protection Board.
Normal Farm Practices Protection Board	To safeguard farmers' rights to engage in normal agricultural activities while addressing conflicts related to agricultural practices, ensuring a balanced approach to agricultural regulation and protection.
Tile Drainage Act, R. S. O. 1990	To regulate drainage systems in Ontario, facilitating efficient water management for agricultural and urban areas while mitigating flooding risks and promoting land productivity and environmental sustainability.
Weed Control Act, R. S. O. 1990	The legislation that gives authorities the power to regulate and manage the spread of noxious or harmful weeds to protect agriculture, the environment, and public health.
Food Safety and Quality Act, 2001	The legislation that establishes standards and regulations to ensure the safety, quality, and integrity of food products, protecting consumers and promoting public health.
Aggregate Resources Act, R.S.O. 1990	The legislation that governs the management, extraction, and rehabilitation of aggregate resources like sand, gravel, and rock, to ensure their sustainable and environmentally responsible use.

3.0 Municipal Agri-food Systems Planning in Ontario

While the Ontario government provides high-level direction relating to planning for agri-food systems, municipal governments are responsible for implementing provincial directives and guidelines at the local level. Each municipal government in Ontario has a slightly different approach to incorporate agri-food systems planning into their policies, plans, and programs. There is a wide-array of land use planning and planning-adjacent initiatives that municipalities in Ontario have implemented to support agri-food systems. This section of the toolkit will focus on three types of initiatives related to agri-food systems planning, including: innovative official plan and zoning by-law policies, partnerships between planning and economic development, and water quality and environmental stewardship through relationships with Conservation Authorities. It should be noted that this section does not provide an exhaustive review of municipal agri-food systems planning activities but rather a snapshot of the types of work that is being undertaken by municipalities across Ontario. Section 6 of this toolkit provides more complete municipal case studies.

3.1 Innovative Official Plan And Zoning By-Law Policies

While all municipal official plans and zoning by-laws must meet the minimum requirements set out by the province, there is the opportunity to go beyond provincial mandates and implement innovative policy approaches at the local level. Examples of municipal governments that have taken unique or noteworthy efforts to incorporate agri-food systems planning in their official plans and zoning by-laws include Waterloo Region, Brant County, and Oxford County. Waterloo Region introduced a Countryside Line as part of the Official Plan in 2009 as a way to control urban sprawl with the goal to, “Protect the rural character of the countryside while supporting the development of strong and prosperous rural communities” (Waterloo Region Official Plan, 2015). “The line is meant to contain future growth within the Region’s urban areas, protect farmland and sensitive natural areas from development” (Waterloo Region Record, 2021).

Brant County has taken the lead on developing land-use policies and approaches related to on-farm diversified uses as a tool to help farmers add to their income potential in prime agricultural areas (County of Brant, 2022). The County of Brant resource document titled Planning Your Agricultural-Related Use or On-Farm Diversified Use Project (2022) explains that “The goal of this policy is to help the County of Brant enhance its agricultural systems and land base while

protecting and enhancing the agricultural economy in our area”. This resource document was released in 2020 and was added to the new Official Plan in 2023.

Oxford County has also taken an innovative approach to diversified- uses in the rural area and has implemented provisions to support rural entrepreneurial uses on non-farm rural residential properties. The goal of this policy is to reduce pressure on rural agricultural land and support small business within the rural area (Oxford County, 2023). Furthermore, these uses are “intended to provide additional live-work opportunities for non-farmers in rural areas” (Oxford County, 2020).

3.2 Partnerships Between Planning And Economic Development

Beyond regulatory land-use planning measures, municipalities in Ontario can undertake a range of economic development initiatives in support of the agri-food sector. Examples of municipalities that have developed a relationship between their economic development staff and agricultural producers or organizations include the City of Guelph and Wellington County, The City of Greater Sudbury, and the Halton Region. The City of Guelph and the County of Wellington have partnered together to work on the Our Food Future circular economy project that was funded by Infrastructure Canada’s Smart Cities Challenge in 2019. Together, Guelph and Wellington were awarded \$10 million to create Canada’s first circular food economy (Swartzentruber et al., 2019). Our Food Future includes an array of stakeholders at different levels of government, NGOs, community organizations, agricultural stakeholders, and others. There are a number of outputs and initiatives related to Our Food Future including the Guelph-Wellington Food Security Action Plan, Grow Back Better Our Food Future’s 10-point recovery plan in response to COVID-19, and the Guelph-Wellington Charter for Food Justice. Experimental Acres Pilot is another initiative that came out of the Our Food Future project and is a municipal-led initiative to support testing and demonstrations of regenerative agricultural practices (Our Food Future, 2023; Wellington County, n.d.).

Looking north, the City of Greater Sudbury supported the creation of the Greater Sudbury Food Policy Council which is composed of a diversity of food systems actors, including industry, community, non-governmental, and municipal partners. Together the Food Policy Council developed a community food strategy to “guide the community towards an equitable, vibrant and sustainable food system” (Greater Sudbury Food Policy Council, 2017). As part of this strategy and the food systems work being undertaken, municipal staff from several departments, including

Public Health, Economic Development, Community Initiatives and Engagement, and Land Use Planning have made themselves available as resources (City of Greater Sudbury Food Policy Council, 2023).

Another way that municipalities can work with and consult their agricultural communities is through an Agricultural Advisory Committee. In the Halton Region, the Halton Agricultural Advisory Committee (HACC) was established to, “provide advice to Regional staff on agricultural matters to assist the Region in achieving its goal for the Agricultural System by maintaining a permanently secure, economically viable agricultural industry and preserving the open-space character and landscape of Halton’s non-urbanized areas” (Halton Agricultural Advisory Committee, 2019). Agricultural Advisory Committees are a great resource as they provide an agricultural perspective and feedback to inform the council’s decision about new plans, policies, and programs.

3.3 Conservation Authorities and Environmental Stewardship

Municipalities in Ontario are also involved in environmental stewardship, water quality, and natural environment initiatives that are relevant to agri-food systems planning. Examples of municipal governments that have developed a relationship with their local Conservation Authority to address water quality improvements include Dufferin, Peel, and York Counties. Each of these counties has initiated a Rural Clean Water Program, “that provides technical and financial assistance to agricultural landowners to enable them to voluntarily implement best management practices that improve and protect water quality” (Dufferin County, 2018). These programs offer grants through different projects as an incentive for the agricultural producers to complete the program. Projects range from adding cover crops, to livestock fencing, nutrient management plans, and tree planting. All of these projects are offered through the Toronto Region Conservation Authority (Toronto Region Conservation Authority, n.d.). Another example is the Huron Clean Water Project which is funded by the County of Huron and delivered by the Ausable Bayfield and Maitland Valley conservation authorities (Huron County, 2023). The Huron Clean Water Project has funded over 3,645 stewardship projects since 2005, with a total value of over \$14.5 million (Huron County, 2023).

Another way that municipalities are involved in environmental stewardship is through Alternative Land Use Services (ALUS) programs. Municipalities that have developed Alternative Land Use

Services (ALUS) include Peel, Middlesex, and Norfolk. ALUS are programs that communities use to help fight climate change, biodiversity loss, and local environmental challenges by restoring land and nature (ALUS Canada, 2024). In Peel Region, the ALUS Peel Pilot Program builds on the Peel Rural Water Quality Program and “helps farmers in the Region of Peel overcome environmental challenges affecting farm productivity and soil and water quality using nature-based solutions” (Peel Region, n.d.; ALUS Canada, n.d.). Projects that are eligible for funding include: native tree and shrub planting, livestock fencing, erosion control structures, and grassland, wetland and stream restoration (Peel Region, n.d.).

Another initiative that municipalities may undertake related to the agri-food sector is the creation of a climate change strategy. In 2019 Durham Region published an addendum to their climate change strategy titled “Growing Resilience Durham Region Agriculture Sector Climate Adaptation Strategy”. The Strategy was a collaborative effort between the involved municipalities, conservation authorities, and agri-food sector stakeholders and is centered on the following themes: increasing education and awareness on agriculture and climate change adaptation, building community and research capacity, enhancing policy support for agriculture and climate change adaptation, and addressing agricultural sector climate adaptation through cross-sectoral programs and initiatives (Durham Region, 2019, p. 6).

4.0 Resource Directory

There are an array of guides, data sources, networks, contacts, and existing toolkits from other jurisdictions relevant to agri-food systems planning in Ontario. This section of the toolkit seeks to provide a starting point for planning staff and councils working on agri-food systems planning in their municipalities. A more complete resource directory is included in Appendix A of this toolkit.

4.1 Provincial Policy Guidance

- These [key agricultural land use policies](#) from OMAFRA help protect agricultural land.
- [Normal Farm Practices/ FFPPA](#) explains how the FFPA protects “normal farm practice” in Ontario and how conflicts, nuisances and bylaws are handled.
- [Agricultural system and natural heritage system policies in Ontario's provincial plans](#) explains the relationship between the Natural Heritage System and the Agricultural System.
- OMAFRA's [Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas](#) (2016) provides more detailed policy guidance on permitted uses in prime agricultural areas.
- OMAFRA's [Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe](#) (2020) provides supplementary direction to A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019).
- [Minimum Distance Separation \(MDS\)](#) formulae and guidelines are land use planning tools that determine setback distances between livestock barns, manure storages or anaerobic digesters and surrounding land uses to minimize land use conflicts and nuisance complaints related to odour.
- OMAFRA also provides [Nutrient Management](#) resources.

4.2 Data and Mapping Resources

- OMAFRA's [Agriculture & Food Statistics](#) provides statistics on crops, livestock and poultry, dairy, food and beverage, counties, farm finance, trade.
- OMAFRA's [Ag Maps](#) is an interactive online application that allows you to create custom maps and find agricultural information.
- OMAFRA's [Ontario Ag Systems Portal](#) provides statistics and spatial information about the agri-food supply chain.
- MNRF's [Ontario Geohub](#) is a source of geospatial data.

- Canadian Agri-Food Policy Institute's [Land Use Hub](#) is a web mapping tool that shows agricultural land attributes, management practices, and key agri-environmental indicators.
- Agriculture and Agri-Food Canada [Annual Crop Inventory](#) provides annual crop type digital maps.
- Statistics Canada's [Census of Agriculture](#) provides a comprehensive profile of the physical, economic, social and environmental characteristics of Canada's agriculture industry, every five years.
- [Land Evaluation and Area Review](#) (LEAR) methodology can help inform the designation of prime agricultural areas.
- [ConnectON](#) provides geo-mapped data and dashboards to support investment, business retention and growth.

4.3 Academic Research

- This review of [Agricultural Advisory Committees in the Greater Golden Horseshoe](#) explores the role of regional AACs, including their value, challenges, and successes.
- Kwantlen Polytechnic University's [Planning for Sustainable Food Systems in Canada](#) research project examines the following critical areas of food systems planning in Canada.
- [Aggregate & Agriculture Municipal Toolkit](#) helps municipalities enhance the relationship between aggregates and agriculture.
- Repository of [Dr. Wayne Caldwell's](#) research projects and publications.
- Repository of [Dr. Sarah Epp's](#) research projects and publications.

4.4 Organizations and Related Initiatives

- OMAFRA:
 - [Agriculture Economic Development - A Resource Guide For Communities](#) helps economic developers, land-use planners, municipal councils and community leaders explore agriculture as an economic development opportunity.
 - The [Community Economic Development Unit](#) and the [Staff Location & Information Portal](#) provide a list of key OMAFRA contacts.
 - [Rural Economic Development \(RED\) Program](#) provides funding to help create jobs and boost growth in rural communities.

- Ontario Federation of Agriculture:
 - A joint initiative with OMAFRA, the [Agriculture Economic Development and Planning Community of Practice](#) is a free, online network to bring together economic development and planning professionals across Ontario interested in agricultural issues.
 - [Agriculture Matters – a Guide for Municipal Councillors and Staff](#) provides an overview of issues affecting farm businesses today and opportunities for local communities.
 - [Always in Season: A Toolkit for Local Food Practitioners](#) is a toolkit for communities to guide them through potential activities, key performance metrics, funding opportunities, and ways to collaborate to support the agri-food sector.
- The [Ontario Farmland Trust](#) is dedicated to protecting and preserving Ontario farmlands and associated agricultural, natural and cultural landscapes of food production for the benefit of Ontarians today and future generations.
- The [Greenbelt Foundation](#) is a charitable organization, and receives funding from the Government of Ontario and other public and private support to make strategic investments that bolster the richness of life in the Greenbelt.
- [Golden Horseshoe Food and Farm Alliance](#) is a partnership between municipalities, Federations of Agriculture, Conservation Authorities, the Greenbelt Fund, Durham College and Niagara College, the Holland Marsh Growers and the food industry.
- Sustain Ontario is a province-wide, cross-sectoral alliance that promotes healthy food and farming that compiled a [directory of buy local initiatives across Ontario](#).
- Other significant agricultural organizations in Ontario include: Ontario Soil & Crop Improvement Association, National Farmers Union - Ontario, Christian Farmers Federation of Ontario, and Ecological Farmers Association of Ontario.

4.5 Professional Planning Organizations

- Canadian Institute of Planners (CIP):
 - [Plan Canada Issue on Food](#) (2023)
 - [Planning Together: Student Symposium – Planning & Food Systems](#) (2022)
- Ontario Professional Planners Institute's [Planners Connect](#) is a members-only community forum to discuss any and all topics related to the planning profession.
- [Regional Planning Commissioners of Ontario](#) is an organization of upper and single-tier municipal staff that provides planning services and planning advice to municipal councils.

4.6 Specific to Northern Ontario

- [Facilitating the Agricultural and Local Food Sector in Northern Ontario: A Municipal Toolkit](#) identifies 10 actions that Northern Ontario municipalities can implement to support and grow Northern food production.
- [Rural Agri-Innovation Network](#) (RAIN) is dedicated to support agricultural organizations, producers, suppliers and agri-entrepreneurs in Northern Ontario; to enhance the industry by providing a collaborative infrastructure and network that enhances stakeholder capabilities and business growth.

4.7 Useful Resources from the United States

- [Growing Local: A Community Guide to Planning for Agriculture and Food Systems](#) (USA)
 - [Checklist - Is your community farm friendly?](#)
- [Food System Resilience: A Planning Guide for Local Governments](#) (USA)

5.0 Ten Actions Municipalities Can Take

Through land-use planning, economic development, and broader decision making, municipalities have the ability to encourage or hinder agri-food systems in their communities. Through a review of grey and academic literature (included in Section 3 and Appendix C respectively), as well as the preparation of six case studies (Section 6), the following ten actions have been identified to help municipal staff and councils undertake agri-food systems planning. The first three actions are foundational activities and are equally important for municipalities that are just getting started with agri-food systems planning and municipalities that are well on their way. Actions four and five speak to the importance of having an agri-food systems champion or advocate on staff and coordinating efforts between municipal departments. Actions six, seven, and eight provide direction related to municipal programs, policies, and plans. The last two initiatives speak to the importance of knowledge sharing and building your network with other stakeholders involved in agri-food systems planning. In the following pages, each of these actions is elaborated including a number of possible initiatives for municipalities to undertake.

Agri-food Systems Planning in Ontario: Ten Actions Municipalities Can Take

1. Address gaps in agri-food systems knowledge
2. Identify and understand municipal agri-food systems assets
3. Know your local and regional agri-food stakeholders and collaborate with them
4. Identify agri-food systems champions on staff
5. Coordinate efforts between municipal departments
6. Create and revise municipal policy and plans to support agri-food systems
7. Create a municipal agri-food systems strategy and invest in local infrastructure
8. Consider how agri-food systems contribute and are vulnerable to climate change
9. Identify and connect with agri-food systems planning knowledge networks
10. Build relationships with municipalities, provincial ministries, and regulatory bodies

5.1 Address gaps in agri-food systems knowledge

Agri-food systems are often overlooked in the planning field until they face external stressors such as environmental concerns, loss of farmland, or health and accessibility challenges. In order to best support agri-food systems and future populations, municipal staff and council members should gain a deeper understanding of the different stakeholders, infrastructure, and processes involved in agri-food systems. By gaining knowledge of local and regional agri-food systems and supply chains, municipalities can better understand trends and challenges facing the agri-food sector as well as the different approaches and initiatives involved in agri-food systems planning. Possible initiatives to continue learning about agri-food systems for municipal staff and council include farm field days, meeting local agri-food stakeholders in the community, and attending conferences, webinars and workshops.

Municipalities can also consider creating and funding programs that provide residents the opportunity to learn about farming and agricultural practices, seasonal eating, and how to prepare different foods (for example how to prepare squash). Programming for the general public should emphasise integrating local food producers into programs and bringing healthy local food options into schools and other public institutions. This approach has flourished in the City of Buffalo as a result of their “farm-to-table” school program that provides kids with education about nutrition and farming through field trips and hands-on experiences, emphasises providing local food options in schools, and encourages the next generation of agri-food systems enthusiasts (ECAFP, 2012).

Possible Initiatives

Council Education – Many councilors find themselves lacking knowledge related to agricultural issues, so hosting municipal workshops to improve overall knowledge for council and staff alike, as council often relies on planning staff, is a simple solution to create greater agricultural focus in municipalities. Other recommended educational tools include farm visits, newsletter, and mandatory training sessions related to agriculture.

Knowledge Sharing – The Green Belt Foundation [Enhancing Municipal Capacity to Support Agriculture in the Green Belt Report](#) provides several useful recommendations for building a staff knowledge about agricultural issues.

5.2 Identify and understand municipal agri-food systems assets

To build a strong and resilient agri-food system, municipal staff and council must have a strong understanding of the current agri-food system including where the community has the potential to grow and where the community already shines. Doing this allows the municipality to design food policy that benefits existing infrastructure, and support areas that may be lacking in the community. One way municipalities can do this is by mapping their agri-food systems assets. Having a strong understanding of municipal agri-food systems assets also allows municipal staff to identify why certain sectors may be lacking, and provides the opportunity to address shortcomings in the local community, in doing so providing a significant boost in food systems development.

Possible Initiatives

Community Engagement – Utilizing community meetings (particularly focused on the farming industry), gathering data using community surveys (such as employment surveys focusing on the agricultural industry), and other engagement techniques are the easiest way to identify assets within the community and identify focus areas for municipal programs.

Agri-food Systems Report Card – The food systems report card is a consolidated report that focuses on highlighting key programs/initiatives within the community, identifying potential areas of growth/improvement, and evaluating progress in key areas of a communities food systems strategy. For example, Thunder Bay + Area Food Strategy releases a Community Food System Report Card annually. The report card can be produced by the municipality or through a partner organization, for example Thunder Bay produces their report card in partnership with Lakehead University.

Food Charter – A food charter is a guiding document developed by various community stakeholders, with a goal to align and represent the interests of all community members. The food charter provides an opportunity to highlight key challenges and community assets and align the municipal and community interests to shape local food systems. See Guelph-Wellington Charter for Food Justice for an example.

5.3 Know your local and regional agri-food stakeholders and collaborate with them

The agricultural community and municipal governments might lack mutual understanding, which can pose a challenge for building relationships. Getting to know your local, regional, and provincial agri-food stakeholders is important for gaining an understanding of the farming community, while also creating a network of agri-food advocates that can be engaged proactively or when challenges arise.

Local agri-food stakeholders might include individual farmers, federations of agriculture, conservation authorities, agricultural societies, community food systems champions, the local farmers market, health units, community garden or urban agriculture groups, chambers of commerce, local commodity groups (i.e., Waterloo Milk Committee), farm retail businesses, regional tourism organization that can support agri-tourism, agricultural industry retail partners (agronomists, feed mills, fertilizer and seed co-operatives, grain elevators, etc.), and local or regional conservation organizations (i.e., Alternative Land Use Services).

Provincial agri-food stakeholders in Ontario include: Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Ontario Federation of Agriculture (OFA) and its respective zones, provincial commodity groups (e.g., Grain Farmers of Ontario, Dairy Farmers of Ontario), Ontario Soil and Crop Improvement Association (OSCIA), Ontario Association of Agricultural Societies (OAAS), and Conservation Ontario.

Possible Initiatives

Agricultural Advisory Committees (AAC) – Agricultural advisory committees are a group of citizens who have been appointed by council to represent the needs and interests of the agricultural industry. These committees can provide input to municipal staff and council on issues that relate to agriculture and the agri-food system. These committees provide an agricultural lens to local policies, plans, and processes that will benefit and enhance the sector as a whole (Epp, 2018).

Local /Regional Food Policy Councils – Municipalities can play an important role in either establishing or contributing local/regional food policy councils. If establishing a new food policy council, a 1–3-year timeline will likely be required to attain resources, identify staff members, and establish relationships with stakeholders. Establishing a food policy council is an effective way for municipalities to access reliable, accurate, and specific knowledge on local agri-food systems, and supports greater cooperation between municipalities and agri-food stakeholders.

Coordination with Conservation Authorities – Conservation authorities often work with farmers to protect and preserve the land. Both farmers and conservation authorities are vital for environmental protection. Collaboration between farmers and conservation authorities is key for preserving wetlands and natural habitats (OFA, 2018).

Consultation with Farmers on Transportation Networks – Changes to the way traffic moves throughout the community as a result of the construction of new roads, bridges, or incorporating roundabouts (traffic circles), can significantly impact the way farming equipment travels from location to location. Municipal staff should consult with farmers and consider how farm equipment can safely maneuver through the town, which is necessary for the safety of all the drivers, pedestrians, and farmers (OFA, 2018).

Evaluation of Municipal Relations with Agri-Food Sector – Honest internal evaluation of the municipality's relationship with the agricultural community is a valuable way to determine the strengths, weaknesses, challenges, and opportunities for improvement. Recognizing and reflecting on the commitments to incorporate an agricultural lens into decision making, provides a forward thinking approach and shows appreciation for the agricultural sector's contributions.

5.4 Identify agri-food systems champions on staff

Municipal staff play an important role in guiding and developing agricultural policies and initiatives which are central to a robust food system. It is important to ensure staff at all levels are educated on agricultural and agri-food system issues. To build trust within local agricultural communities it is important to identify staff who can effectively communicate with farmers and other agri-food stakeholders, and who can offer support to the agricultural community. It is also important to ensure education goes beyond the planning department, so that all stakeholders in the planning process (i.e. council, engineering, economic development) can collaborate effectively. By ensuring education is utilized across the organization and staff are made available to agri-food stakeholders and organizations, municipalities can develop more robust food systems.

Possible Initiatives

Agricultural Summits – By hosting agricultural oriented summits municipalities can provide opportunities for staff from across a region to gather and provide policy recommendations and collaborate to improve food systems (i.e. Rural Summit hosted by Ottawa, AG 4.0 Summits formerly hosted by Grey County).

Providing Staff Resources – Providing staff resources to the agricultural advisory committee or local /regional food policy councils is an important way municipalities can show support for the agri-food sector. Doing this allows municipal staff to stay connected with agri-food stakeholders and up-to-date about community issues and challenges.

Hosting Meetings in Partnership with Local Industry Organizations – Gathering local farmers, county federation of agriculture representatives, agricultural industry leaders from local commodity groups, municipal staff from different departments, council members, MPs and MPPs, is a beneficial way to learn about the challenges and opportunities and to strengthen their relationships. Topics of discussion can include; direct farm marketing, agri-tourism, and understanding how local planning policies affect value-added on farms (OFA, 2018).

Staffing – Many departments lack staff focused on agricultural issues, one solution is hiring staff specializing in these kinds of planning issues, another solution is providing time during work hours for staff to attend workshops and webinars focusing on agriculture planning.

5.5 Coordinate efforts between municipal departments

Agri-food systems planning initiatives often involve many municipal departments (e.g., planning, economic development, roads, building, communications). Initiatives can be focused on support for producers, such as reduced costs on agricultural building applications, incentives for on-farm diversified uses, or support for rural infrastructure. Initiatives can also be focused on educating consumers about how to access local food in their community, such as through farmers' markets, open farm days, farm and market guides, and culinary strategies. For these agri-food initiatives to be successful, collaboration between municipal departments, including planning, economic development (including tourism), public works, and, in some cases, council, will bring together different perspectives, priorities, challenges, and opportunities to support the shared goal of promoting local agri-food initiatives.

Possible Initiatives

Open Dialogue Across Departments and Municipalities – Facilitating discussion between several departments from the same or different municipalities allows for the sharing of experiences, best practices, and various perspectives that may help respond to challenges in agri-food initiatives in different communities. A regional, inter-departmental Community of Practice of municipal practitioners could facilitate this collaboration.

Institutional Knowledge – Documenting and sharing information with staff across departments on past agri-food initiatives ensures that everyone has the same knowledge base and supports efficient collaboration.

Agri-Food Awareness and Appreciation Across Municipal Departments – Fact sheets and farm tours are exceptional ways for municipal staff to gain information on agricultural practices and build relationships with agri-food stakeholders. In particular, the opportunity to bring staff into the field and make real life connections can bring a personal, relational perspective when considering new initiatives and can offer a better understanding of how different municipal departments play a role in supporting the agri-food sector.

5.6 Create and revise municipal policy and plans to support agri-food systems

Municipal policy plays an important role in supporting agri-food systems on both rural and urban lands (including production, processing, storage, distribution, and retail). Municipal official plans and zoning by-laws should be reviewed using an agri-food systems lens. Strong policies have the potential to effectively address negative impacts and foster positive interactions and developments at different points from farm-to-fork. Policies need to align in order to support the most vulnerable populations within agri-food systems. Policy alignment also works to support stakeholder accessibility and ease of navigation through the agri-food supply chain. Accessibility and affordability are growing concerns for many populations regarding agri-food systems and addressing these concerns through policies is vital to supporting better practices and opportunities.

Possible Initiatives

Food Production and Processing Policy – Protecting and promoting land for agriculture and food production and processing is key for a prosperous and sustainable agri-food system. Land use policy can also be used to support food production in urban settings. For example, developing vacant public lots to support small-scale farming initiatives within communities and/or rehabilitating industrial sites for agriculture or food processing within existing urban boundaries. Municipalities should work with different agricultural organizations (OFA, OFT, etc.) to better understand the intersection between planning policy and agri-food systems in their jurisdiction.

Food Retail and Distribution – Food retail and distribution play a key role in influencing individuals' experiences of agri-food systems. Municipalities can establish mobile markets, whether it be through bringing people who do not have transit access to local farmers markets or farms (i.e. Gleaning program in Thunder Bay), or providing farmers with resources to bring their produce into underserved communities. Municipalities can help establish an agri-food culture and identity through supporting local vendors and providing programs and initiatives to make local food an affordable and accessible option.

5.7 Create a municipal agri-food systems strategy and invest in local infrastructure

Many municipalities in Ontario have created or are in the process of creating an agri-food system strategy, agricultural plan, food charter, or similar. When planned properly agri-food systems can benefit several different industries such as tourism, natural resource and water management, education, and public health. Agricultural and agri-food system strategies should address both current and future challenges, and emphasize collaboration, inclusion and communication with all stakeholders in a community to create an impactful strategic plan. One key area within strategic planning for agri-food systems that needs to be addressed is infrastructure. Infrastructure in agri-food systems require cooperation between all municipal departments and various external stakeholders to navigate a wide array of industries; including farming equipment and machinery, diverse transportation modes, routes and maintenance, development in technology, processing and packaging, and utilizing underused public and private land in both urban and rural settings for agri-food systems (community gardens, urban agriculture, edible street ecology, brownfield developments).

Possible Initiatives

Agricultural and Agri-food Systems Strategies – These types of documents should be created in collaboration with agri-food systems stakeholders and should be reviewed every 3-5 years, along with other master plans. Strategic agri-food systems planning should address the needs of all populations within the municipality, including inter- and intra-generational considerations. The Resource Directory included in Appendix A includes a number of toolkits relevant to creating agricultural and agri-food systems strategies and plans.

Invest in Local Agri-food Systems Infrastructure – In addition to creating strategic plans related to the agri-food sector, municipalities across Ontario are investing in agri-food infrastructure much like any other type of local infrastructure. The Ontario Agri-food Venture Center in Northumberland, Huronview Demo Farm in Huron County, and the Ottawa Smart Farm are great examples of this.

5.8 Consider how agri-food systems contribute and are vulnerable to climate change

Agri-food systems and climate change have a complex, interconnected relationship, so planning for agri-food inherently requires a climate lens. In 2021, Canada's agriculture sector accounted for 8% of Canada's total annual emissions, from enteric fermentation, manure management, agricultural soils, and field burning of agricultural residues (ECCC, 2023). As managers of the carbon and nitrogen cycles, the agri-food sector also carries significant climate mitigation potential through adopt of beneficial practices, such as reducing soil erosion, reducing nitrogen and phosphorus leaching, conservation of soil moisture, increasing species diversity in crops, and frequent crop rotation (Smith and Olesen, 2010). Further, practices such as energy conservation and fuel switching, soil conservation, and on-farm energy production can help make farms more sustainable and profitable.

When it comes to adaptation, on one hand, warming temperatures will result in extended growing seasons, lower livestock feeding requirements, lower energy costs, improved soil quality that can enhance carbon sequestration and allow shifts from annual crop production to perennial crops and grazing. On the other hand, agriculture is particularly vulnerable to more frequent extreme weather events such as drought and flooding, and increased prevalence of pests and diseases (Gross, n.d.).

The federal Greenhouse Gas Pollution Pricing Act, which regulates the carbon tax in Canada, has been of particular interest to the agriculture sector. In 2023, the Act was amended to expand the definition of eligible farming machinery and extend the exemption for qualifying farming fuel to marketable natural gas and propane because farmers don't have other commercially viable fuel options (Bulowski, 2023).

Possible Initiatives

Climate Risk Assessment – Support mapping and data collection that will increase a regional understanding of climate vulnerabilities, risks, and opportunities to the sector. [Ontario's Climate Change Impact Assessment](#) begins to assess climate risks in the food and agriculture sector and can inform municipal initiatives. For example, in 2022, the Climate Risk Institute conducted a [climate risk assessment for the agriculture sector](#) in Grey, Bruce, and Huron counties, highlighting

best management practices case studies, such as Alternative Land Use Services (Climate Risk Institute, 2020).

Incentives – Consider incentivizing beneficial farm practices, like Wellington and Grey County’s [Experimental Acres](#) program, which provides support for the first year of trying new regenerative farming practices on a small scale, or Alternative Land Use Services (ALUS), which engages farmers in increasing natural assets.

Local Food Initiatives – Promote local food networks to reduce food miles and strengthen the local economy.

Investment in Adaptation – Understand that adaptation measures will require significant financial and time commitments. Recognize that climate impacts will be felt differently across agricultural sectors, so ensure initiatives are flexible and reflective of that diversity (OFA, 2018).

5.9 Identify and connect with agri-food systems planning knowledge networks

Collaboration between farmers, agri-food stakeholders, and municipal staff is an important first step to improving agri-food systems planning. Connecting with existing knowledge networks also working on agri-food systems planning from a regional, provincial, national or international standpoint is just as important. Many of these networks include municipal and planning professionals who have come together with a mission to advance agri-food systems by preparing planners with the tools and resources to help them succeed. These networks serve as a platform for information sharing, collaboration, and networking for municipalities to learn how to implement best practices that will benefit food security for present and future generations.

Ontario Networks

- [OMAFRA Agriculture Economic Development and Planning Community of Practice](#)
- [Ontario Professional Planner Institute, Planners Connect](#)
- [Rural Agri-Innovation Network \(RAIN\)](#) (Northern Ontario)

Canadian Networks

- [Food Communities Network – Réseau Communautés Nourricières \(FCN-RCN\)](#)
- [Canadian Agri-food Policy Institute](#)
- [Indigenous Food Systems Network](#)

International Networks

- [American Planning Association Food Systems Division](#) (USA)
- [Growing Food Connections](#) (USA)

Possible Initiatives

Connect Through Membership or Participation – The first step to creating a connection or becoming part of a network is to find out if it is the right fit for your municipality's objectives by learning more about the network's mission and previous work. Investigate whether the tools and resources that are available are relevant or have been used before by your municipality. In the age of information overload and limited municipal capacity, municipal staff should continuously

evaluate if participation is relevant and not be afraid to unsubscribe or not renew membership if objectives do not align.

Reach Out to Other Municipalities – Determining whether to join broader networks can be overwhelming or intimidating because of the different policies across different jurisdictions that may not be relevant locally. Therefore, identifying these networks can also be viewed as an opportunity to connect with other municipal staff and gain an understanding of their reasoning for joining the networks outside their area. Different practices work for different municipalities, so these networks can be a catalyst for developing and implementing new and innovative initiatives.

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5.10 Build relationships with municipalities, provincial ministries, and regulatory bodies

While municipalities take the lead on guiding local planning policy, it is important to stay connected with all levels of government. Connections with the provincial government are vital as they enforce and oversee the Planning Act, which provides the general guidelines for all land use planning across the province. The federal government offers several funding and support programs which can fuel agri-food systems growth and development. Other municipalities and regulatory bodies (such as conservation authorities) have a wealth of knowledge. Developing stronger relationships with all stakeholders in the planning world will help to improve policy development, and support municipal agri-food systems programs and growth.

Possible Initiatives

Attending Conferences – Attend planning conferences such as those hosted by OPPI, CIP, OMAFRA, OFA, and/or other rural symposiums and summits. These conferences provide valuable networking opportunities, offer information on many federal and provincial funding programs, and allow the opportunity to hear about policy being used in other municipalities. Furthermore, many conferences are open to research submissions, getting involved in presenting research, or volunteering to assist can further build goodwill and contacts within these organizations.

Take Advantage of Programs – Government organizations often offer support programs, whether its funding, resources, workshops, or education. Staying up to date on different government ministry initiatives is an important way to continue learning about and support the agri-food sector. For example, [Agricorp](#) is a crown corporation operated under OMAFRA that offers a number of programs to support agricultural growth across Ontario. Specific to funding, the agriculture.canada.ca website provides a directory of all the funding programs and initiatives offered across the country.

Provide Feedback – Provincial Policy Statement changes, Federal Program development, OPPI conference programming etc., all have a comment period to allow consultation and feedback. Providing comments can help to ensure your voice is reflected in higher level policy, and helps to make your presence known at the higher levels of government, or within other professional organizations.

6.0 Case Studies

The six case studies explored in this section exemplify the wide-range of policies, programs, and plans that municipal governments are pursuing related to agri-food systems planning. Each case study provides a community profile and summary of agri-food challenges, before identifying agri-food systems planning initiatives that the municipality supports and key stakeholders involved. Case studies were selected to highlight diverse municipal structures and geographies in Ontario, in addition to one case study from the USA which was selected to explore agri-food systems planning approaches outside of the Ontario context.

6.1 Grey County

Grey County is a rural, upper-tier municipality in southwestern Ontario, located southwest of Georgian Bay and includes a large tract of the Niagara Escarpment. It consists of small towns, small urban centres, and significant agricultural and natural heritage areas. The total population is 100,905, experiencing 7.5 percent population growth since 2016 (Statistics Canada, 2023), the highest population growth in decades. The median age is 49.6 years, and given its large retiree population, nearly 70% of households are two people or less (Statistics Canada, 2023).

The County consists of nine member municipalities - the City of Owen Sound, Municipality of West Grey, Municipality of Meaford, Township of Georgian Bluffs, Municipality of Grey Highlands, Town of Hanover, Township of Southgate, Town of The Blue Mountains, and Township of Chatsworth. Owen Sound is home to approximately one-fifth of the County's population, while Town of the Blue Mountains is the fastest growing with 34% population growth from 2016 to 2021 (Statistics Canada, 2023).

Agri-Food Challenges

Agriculture is Grey County's most specialized industry and most significant export industry, with a location quotient of 4.01 (Statistics Canada, 2023). Agriculture accounts for 2,770 jobs (Grey County, 2017a). According to the 2016 Census of Agriculture, from 2011 and 2016, the County added 56 new farms, saw gross farm earnings increase, and increased overall acres in production (Grey County, 2017a). While the number of farms decreased by 5.9% nationally, the number of farms in Grey increased by 2.5%. In the same five years there was a 61% increase in gross farm receipts from \$288,295,498 to \$463,676,995, mostly due to increases in commodity prices (Grey

County, 2017a). Despite these increases, the agri-food industry experienced a 12% decrease in its location quotient between 2016 and 2021, and a 12% decrease in the number of jobs in this industry. Decreasing agricultural specialization and employment means more land is being used for non-farm or on-farm diversified use. Similar to other areas in southwestern Ontario, local challenges include farm succession, development pressure from population growth, and loss of farmland as non-farmers purchase farm properties. Also, having a rich base of aggregate resources also requires planners to balance the protection of farmland and need for aggregate resources. Amidst these challenges, from 2000 to 2017, the County only lost 135.8 hectares (0.06%) of its prime agricultural land, mostly due to redesignating it to a rural designation (Caldwell, 2020).

Initiatives

Planning Initiatives

Understanding rural and agricultural areas was one of five key themes in Recolour Grey, the County's latest Official Plan (Grey County, 2023a). The "Cultivate Grey" discussion paper focused on this theme and highlighted four key opportunities: 1) protection of farmland; 2) food production and support for the local food movement; 3) growing the rural economy through innovation and on-farm business; and, 4) other resource development including aggregates and forestry (Grey County, 2017b). This discussion paper was informed by several other studies, including On-Farm Business Policy Review (Clarke et al., 2015), Minimum Agricultural Lot Sizes Study (Grey County, 2016), and Aggregate Resources Inventory Master Plan (Jagger Hims Limited et al., 2004). Some of the Official Plan (2023a) policies that directly respond to these themes include:

- Minimum sizes for new lots to reduce farmland fragmentation (s. 5.2.2.2(2));
- Clear criteria for on-farm diversified uses to support economic sustainability (s. 5.2.2(19));
- Allowing severance of an agricultural property for innovative forms of farming that are viable on smaller parcels, subject to meeting certain requirements;
- Ensuring any additional residential unit development occurs within the farm cluster on the property, resulting in a farm cluster for minimum distance separation, reducing the impact on surrounding barns (s.5.2.1(6)); and,

- Considering innovative forms of rural development including residential farm cooperatives, agri-miniums, resource based recreational uses, recreation or tourist-based rural clusters on large lots subject to defined criteria (s.5.4.2.8).

Economic Development Initiatives

Grey County has developed extensive economic development initiatives to support the agri-food sector, including:

- **Grey County: A Local Agri-Food Strategy (2017)** – This strategy identifies actions under six areas of focus: 1) providing targeted support to strengthen the agricultural sector; 2) coordinating services to ensure gaps are addressed; 3) supporting innovation; 4) promoting local product; 5) building partnerships; and 6) facilitating links between producers and consumers (Grey County, 2017c).
- **Agri-Food Asset Map** – This interactive map identifies producers, processors, distributors, and other agri-food assets making it easier for consumers to source local food and helping planners identify gaps in the local agri-food system (Grey County, 2023b).
- **Ag 4.0 Summits** – From 2016 to 2022, Grey County hosted annual summits to provide opportunities for producers to learn from agricultural innovators and connect with professionals from other related creative and technological fields (Intelligent Community Forum, 2015).
- **Made-in-Grey Brand** – Launched in 2019 at the Royal Winter Fair, the Made-in-Grey food brand helps consumers recognize Grey County products at the farm gate and on store shelves (Grey County, n.d.).
- **AgGrid: Agri-Food Business Directory** – In collaboration with Bruce and Simcoe Counties, this guide provides agri-food businesses with a directory of contacts and resources for starting up, expanding or improving their businesses. Topics include: funding and finance, real estate and support, research and development, finance management, legal services, workforce, networking, training, business planning, marketing, distribution, and health and safety (Simcoe, Grey and Bruce Counties, 2021).

Climate Change Initiatives

Grey County is also strengthening the sustainability of its agri-food sector through the County's Climate Action Plan. One of the plan's priority actions is building capacity for sustainable

agricultural best practices, which includes 2050 targets for the percent of pasture land, cropland, and manure under best management practices to minimize greenhouse gas emissions and maximize carbon capture. To help achieve progress toward these targets, Grey County joined Wellington County's Experimental Acres program in 2023), which provides financial support to farmers to test new practices that aim to improve soil health and increase carbon capture (Grey County, 2024a). Further, in January 2024, the County launched a farmer survey at Grey-Bruce Farmers Week to better understand current farm practices related to climate change mitigation and adaptation (Grey County, 2024b).

Key Stakeholders

The Agricultural Advisory Committee is a Committee of Council that contributes local knowledge and expertise on emerging issues and new initiatives and provides input on the development of policies, programs, plans, strategies, or studies related to agriculture.

Grey Agricultural Services (GAS) is a grassroots, non-profit organization that supports the agriculture sector through various knowledge sharing events and programs. Grey County provides annual funding to support Grey Agricultural Services operations (approximately \$68,000 in 2024).

Other key agricultural stakeholders include: Alternative Land Use Services (ALUS) Grey-Bruce, Grey County Federation of Agriculture, the Grey County Soil and Crop Improvement Association, Eat Local Grey Bruce, and the conservation authorities.

6.2 City of Ottawa

Ottawa is a large single-tier municipality located in Eastern Ontario along the Ontario-Quebec border. Ottawa is home to just over 1 million people, making it the fourth largest city in Canada (Statistics Canada, 2021). The median age in Ottawa is 40 and the average household size is 2.5 people (Statistics Canada, 2021). Ottawa has the highest proportion of university-educated residents among Canadian cities and the median household income before taxes in Ottawa is \$86,451 (Statistics Canada, 2021). That being said, Ottawa also experiences high levels of poverty and homelessness, and in 2020 Ottawa City Council declared a housing and homelessness emergency (Osman, 2020).

Ottawa's land area is 2,788.2 square kilometres, with a population density of 364.9 per square kilometre (Statistics Canada, 2021). While most people know Ottawa as an urban centre, the municipality also has a significant rural area, including 26 villages. Rural lands, including natural environment areas, make up approximately 80% of the City of Ottawa's total land area (City of Ottawa, 2019).

Agri-Food Challenges

Ottawa's rural area consists of a number of rural uses including those associated with the agri-food sector. In Ottawa there are 906 farms, occupying 234,774 acres of farmland, and generating \$224 million in Farm Cash Receipts (OFA, 2021). The average farm size is 259 acres, with 66% of farms having less than \$100,000 in annual revenue (OFA, 2021). 19% of farms sell products directly to consumers, including 14 farms that operate Community Supported Agriculture programs, 37 farms sell at farmers markets, and 115 farms sell directly at their farm or a stand (OFA, 2021). The top three commodities in Ottawa are grains and oilseed, dairy, and field vegetables (OFA, 2021). Looking more broadly at the agri-food sector in Ottawa, there are 4805 local agri-food businesses employing over 46,000 people (OMAFRA, 2022).

In 2019, the City of Ottawa prepared a discussion paper about rural Ottawa as part of the work that went into preparing the Ottawa Next report and the new Official Plan. The discussion paper identified a number of challenges relevant to the agri-food sector including an aging population, limited rural housing stock, development and growth pressures, farmland loss, compatibility of other rural land uses, rural connectivity, and the availability of agricultural education and training (City of Ottawa, 2019a). The 2019 discussion paper also recognizes agricultural operators as being

vulnerable to climate change and the implications this has for food security (City of Ottawa, 2019a). Food insecurity already affects one in seven households in Ottawa (Ottawa Public Health, 2022). Ottawa Public Health (2022) estimates that the monthly cost of eating healthy in Ottawa is \$392 for a single person and \$1008 for a family of four.

Initiatives

Planning and Economic Development Initiatives

The Rural Affairs Office in Ottawa includes both planning and economic development staff and is responsible for a number of activities relevant to the rural area including agri-food systems planning ([Rural Affairs Office 2024 work plan](#)). As part of preparing the New Official Plan, food systems were identified as one of five priorities in the discussion paper titled “The Building Blocks for a Healthy Ottawa” (City of Ottawa, 2019b). The resulting Ottawa Official Plan includes a number of policies that are supportive of both rural and urban food production and distribution, and food access (City of Ottawa, 2021a). Of note, the Ottawa Official Plan (2021b) identifies local food production as both a contributor and solution to climate change, and identifies five actions to enhance food security including: protecting agricultural lands, supporting diversification (including both indoor and outdoor production), supporting community gardens and urban agriculture, and encouraging climate smart best practices. The corresponding Zoning By-law (2008) permits urban agriculture (including fruits, vegetables, herbs and flowers) in almost all zones (except rural zones where agriculture is already permitted, and certain industrial zones).

The City of Ottawa also has a Rural Economic Development Strategy (2020) that identifies “innovation in agriculture and agri-food production” as one of five key priorities. As part of this, the Rural Economic Development Strategy (2020) looks at using Community Improvement Plan policies to enable greater on-farm diversification and value-added operations. The strategy also identifies the need for local agricultural programming and agri-businesses resources to better support agri-food system stakeholders. Through both the Official Plan (2021) and Rural Economic Development Strategy (2020) the City of Ottawa emphasises the role of technology and innovation in continuing to shape and support the agri-food sector.

Additional Initiatives

- **The Community Garden Network and Community Garden Development Fund** – there are over 115 community gardens in Ottawa and more than 25 of those are on land owned

by the City (City of Ottawa, n.d.-b). The City (Department of Recreation, Cultural and Facility Services) also manages the Kilborn Allotment Gardens. The Community Garden Network and Community Garden Development Fund are programs of Just Food Ottawa who receive annual funding from the City of Ottawa for this work. Furthermore, the City of Ottawa has established a Community Garden Liaison to help facilitate new gardens on municipal property.

- **Ottawa Smart Farm** – consists of two working fields and several demonstration fields, totalling 100 acres (Cork, n.d.). The farm is located on part of the Area X.O lands in Nepean and supports the testing and demonstration of best management practices and innovative monitoring solutions, including fertile strip tillage, sensors, and weather stations. The Smart Farm is a partnership between the City of Ottawa and Invest Ottawa, and is powered by AgExpert (Area X.O, n.d.).
- **Smart City 2.0 Strategy (2017)** – includes consideration for the agri-food sector including the importance of rural connectivity for rural agricultural producers. The strategy also identifies precision agriculture as an important contributor to a ‘Smart Economy’ and looks to establish Ottawa as a ‘Precision Agriculture Node’ in Canada.
- **Rural Summit 2024** – the City of Ottawa previously hosted Rural Summits in 2005 and 2008. The goal of the 2024 summit is “to recommend improvements to the provision of the City of Ottawa services to residents and communities of rural Ottawa” (Engage Ottawa, 2024). The Summit will consist of at least six meetings, one for each rural ward and a cumulative meeting at the end (Brown, 2024).
- **Ottawa Rural Clean Water Program** – provides financial support for projects that protect and enhance surface water and ground water quality in rural Ottawa (City of Ottawa, n.d.-c). The program offers grants of up to \$15,000 to farmers and rural landowners to undertake a variety of activities related to improving water quality. The program has supported over 1,300 grants since 2000.
- **Savour Ottawa** – was established in 2007 as a collaborative project between the City of Ottawa, Just Food, and Ottawa Tourism. (Just Food, n.d.). The Savour Ottawa initiative aims to “advance, promote and enable the actors, businesses and social enterprises that are re-building the local food economy” (Just Food, n.d.).

Key Stakeholders

The **Agriculture and Rural Affairs Committee** is a municipal committee that makes recommendations to Council on issues and initiatives related to agriculture and associated industries, the rural economy, and rural residential communities, among other things (City of Ottawa, n.d.-a).

Just Food (previously the Ottawa Food Security Group) is a non-profit, community based organization that works across urban and rural agri-food systems in both Ottawa and the surrounding region. Just Food is identified in the Rural Economic Development Strategy as a key partner for the City of Ottawa (City of Ottawa, 2020). Just Food receives funding from the City of Ottawa and works with a number of municipal departments including: Community Funding, Rural Affairs, Economic Development and Sustainability Markets Management, Public Health, Parks and Recreation, Public Works.

The **Ottawa Food Policy Council** was established in 2013 and aims to represent all stakeholders of the agri-food system in Ottawa. The Ottawa Food Policy Council works with decision making bodies, including the City of Ottawa, to implement comprehensive food policies.

The **National Capital Commission** rents 5,400 hectares of agricultural land to farmers in the National Capital Greenbelt. This initiative is supported by NCC's Sustainable Agriculture and Food Strategy (2017). The NCC also supports a Barn Rehabilitation Strategy (2016) that aims to preserve and enhance agricultural infrastructure in the National Capital Greenbelt.

6.3 City of Thunder Bay

Thunder Bay is a single-tier municipality located in Northwestern Ontario. It is one of the larger communities in Northern Ontario, with a population of 146,862 as of 2021 (Statistics Canada, 2023). Thunder Bay has experienced minimal growth since 2016 (0.6%) and has an average community age of 43.8 years (Government of Canada, 2023). The agriculture sector in Thunder Bay is quite robust, with nearly 40,000 acres of farmland and 150 farms operating the sector contributed \$66 million in local GDP and offered nearly 1000 jobs for the community as of 2021 (Ontario Ministry of Agriculture, 2021). Key commodities in Thunder Bay include dairy, grains, oilseeds, and potatoes, and beef production has increased 200% since 2016 (Ontario Ministry of Agriculture, 2021).

Agri-Food Challenges

Thunder Bay serves as a hub in Northern Ontario, and thus can serve as a leader for policy direction in the Northern region. As a result of growing awareness regarding food systems, Thunder Bay established a Food Actions Network to promote local food system growth in the Thunder Bay community (Thunder Bay + Area Food Strategy, 2014). Key concerns in Thunder Bay regarding local agri-food systems include, lost employment and local tax dollars as a result of the pressures associated with commodification and globalization, health concerns associated with widespread promotion of unhealthy food high in sugars, and food systems vulnerability to climate change (Thunder Bay + Area Food Strategy, 2014). These concerns, among others, led to the creation of the Thunder Bay + Area Food Strategy (TBAFS) in 2014. These agri-food systems vulnerabilities and issues were further exposed by the COVID-19 pandemic, which exacerbated food insecurity, especially among vulnerable populations, and emphasized the need for a coordinated effort to address emergency food planning and in 2023 the TBAFS created the Emergency Food Plan. Outside pressures and growing awareness made it clear that the municipality of Thunder Bay needed to focus on establishing a stronger agri-food system policy to address sustainability for the local community.

Initiatives

Thunder Bay & Area Food Strategy (TBAFS)

The TBAFS was established in 2014 under seven guiding principles of sustainability to serve as a policy guideline for food systems planning, as well as to serve as a government body to oversee

food system development (Thunder Bay + Area Food Strategy, 2014). Under the guidance of the TBAFS several initiatives have been developed, some of which are listed below. The goal of the TBAFS is to build a robust local food system to strengthen food security in Thunder Bay, encourage the use of and investment into local food, and improve sustainability in the community. Via the TBAFS the community has seen the release of an Emergency Food Plan in response to pressures on the food system resulting from COVID-19, and the development of a community food systems report card in collaboration with Lakehead University to evaluate the community's food system progress.

Gaagige Zaagibigaa (GZ) and Indigenous Supports

Gaagige Zaagibigaa (GZ) is a community initiative to bring together indigenous stakeholders to address food sovereignty and insecurity. This group is working towards developing a strategy to address indigenous food insecurity through comprehensive planning, financial and technical resources and community prioritization (Thunder Bay + Area Food Strategy, Report Card, 2023). Beyond this the municipality of Thunder Bay has directed spending on supporting indigenous led businesses, including wild-harvested foods, and has increased their spending over the years, including a major increase from 2019 to 2020 from \$2,200 to \$9,700 (Thunder Bay + Area Food Strategy, Report Card, 2023).

SNAPP (Sustainable New Agri-Food Products & Productivity) Program

Utilizing funding from the Northern Ontario Development Fund, the SNAPP program was established to offer funding for small agri-food producers in Northern Ontario (Thunder Bay + Area Food Strategy, Report Card, 2023). This program offers significant funding for development of new products, productivity enhancement and clean technology growth in agriculture (Rural Agri-Innovation Network, 2024). Thunder Bay has been a partner of the project, with a regional representative and eight applicants successfully utilizing grants to expand agri-food businesses such as a greenhouse, cold storage, an oil press, and some brewing systems being developed on existing farms (Thunder Bay + Area Food Strategy, Report Card, 2023).

Additional Initiatives

Additional agri-food systems initiatives are identified in the the Thunder Bay and Area Food Strategy Report Card (2023) include:

- **Northwest Nosh** – An annual magazine publication which highlights local farms and their practices in supporting sustainable food systems.
- **Court Street Edible Food System** – Urban forest with berry bushes and fruit trees which locals can pick during the harvest season.
- **Gleaning Program** – Offers free bus transportation to local farms to help make local produce more accessible.
- **tbayInSeason.ca** – Online directory helping to connect people with local food sources, provides recipes and seasonal guides using locally grown products.
- **Community Pasture** – Shared community grazing lands for cows managed by a non-profit group.
- **Community Food Market & Greens Prescription Program** – Offers food insecure households produce at wholesale costs and a 15-week subsidy program for households facing health challenges to access the market for no cost.

Key Stakeholders

In addition to the City of Thunder Bay staff and council, and the Thunder Bay & Area Food Strategy team, there are a number of key stakeholders involved in agri-food systems planning in Thunder Bay, including: Fort William First Nation, Food Access Coalition, Federal and Provincial Government, Lakehead University, Red Cross, Salvation Army, Thunder Bay District Health Unit, Thunder Bay Indigenous Friendship Centre, Roots Community Food Centre, Dew Drop Inn, Regional Food Distribution Association, and neighbouring rural municipalities (Thunder Bay + Area Food Strategy, Emergency Food Plan, 2023).

6.4 Wellington County and the City of Guelph

Wellington County is an upper-tier municipality in south-western Ontario and made up of seven member municipalities including the Town of Erin, Town of Minto, Township of Wellington North, Township of Mapleton, Township of Centre Wellington, Township of Guelph/Eramosa, and the Township of Puslinch. The City of Guelph is located within the boundary of Wellington County, but is a separated single-tier municipality. With Guelph included, the county's population in 2021 was 241,026—an 8.2% increase over the 2016 census (Statistics Canada, 2023). By 2051, the county's population is predicted to increase by almost 61% (Wilton Consulting Group, 2023). According to Wilton Consulting Group (2023), 60% of the county's soils are Class 1 and 81% are Class 1-3. Wellington County has a thriving agricultural sector that contributes \$2.8 billion to Canada's GDP, or 5% of the entire amount made by Ontario's agri-food sector (Wilton Consulting Group, 2023). The county accounts for 10% of Ontario's acres dedicated to silage corn, 9% of mixed grain, 8% of barley, 12% of dairy cattle and milk farms, 10% of poultry and egg production, and 8% of hog and pig production (Wilton Consulting Group, 2023).

As mentioned previously, the City of Guelph is a separated single-tier municipality within the boundaries of Wellington County. The City of Guelph has a population of 144,365 people based on the 2021 census which is an 8.8% increase from the previous census in 2016 (Statistics Canada, 2023). The median total household income in Guelph in 2020 was \$94,000 (Statistics Canada, 2023). The City of Guelph, in collaboration with Wellington County as well as other community-based organizations, is supporting the sustainability and resilience of its food system through a variety of programmes and initiatives including the Net-Zero Food Systems Challenge, Our Food Future, the Food System Resiliency Table, the Circular Food Economy, and The SEED.

Agri-Food Challenges

One in six families in Guelph-Wellington struggles with food insecurity, and the price of food is rapidly rising (Our Food Future, 2023). Meanwhile, between a third and a half of the food that is produced in Guelph-Wellington is thrown away, the majority of which is disposed of in landfills, where it releases greenhouse gases that contribute to global warming (Our Food Future, 2023). Ashlee Cooper, manager of Food Equity and Resiliency in the City of Guelph's Smart Cities Office, explains agri-food systems challenges in Guelph-Wellington:

Rising demand at food banks, biodiversity loss, huge amounts of food lost and wasted, and soaring farmland prices are all symptoms of a food system that simply doesn't serve everyone in our community equally, to fix these problems, we need to focus on the broader system such as how we grow, distribute, and consume food. We need to learn how the construct of race, and colonialism, patriarchy, and capitalism have shaped our food system so we can craft one that is equitable for everyone. (City of Guelph, 2023)

Initiatives

Guelph - Wellington Charter for Food Justice

The community's vision and principles for a fair and sustainable food system were considered and incorporated into the Guelph - Wellington Charter for Food Justice Charter which was developed with the help of many community members and stakeholders. Through investment in a food system where the right to food is respected for all, the Charter seeks to unite communities, corporations, and governments. Its purpose is to create a food movement led by people who have experienced food insecurity firsthand, including black, indigenous, and other people of colour, 2SLGBTQI+, low-income, and people with disabilities. In addition to promoting a fair and just food system, the Charter, which is currently being rewritten, will include updated measures to remove systematic oppression (FSRT, 2023). Both the City of Guelph and Wellington County support the Charter's commitment to food justice by endorsing initiatives that are aligned with five main themes; a) Land and all our relations; b) Health and Well-Being; c) Shared Prosperity; d) Culture; e) Education.

Experimental Acres, Wellington County

The Experimental Acres project was created in 2022 with the goal of supporting small-scale farmers who want to pilot innovative farming techniques. The pilot's objectives are to mitigate risk, foster a supportive community, and help gather business cases that illustrate what will be worthwhile to replicate. In order to apply to this programme, farmers must propose a unique question that they want to answer in line with their objectives and areas of interest. In addition to providing financial support, the county also offers soil testing and community-building activities (Dainard & Grigg, 2023). Three sources of funding are available:

1. Living Roots & Green Cover: Up to \$1000 to maintain soil cover, helping to reduce erosion through cover cropping, intercropping, and introducing new crops into the rotation.

2. Innovation: Up to \$2000 for projects that have the potential to benefit soil health, and do not fit into other categories, like reduced tillage practices, winter crop rotation, and planting tall prairie grass.
3. Animal on the Farm: Up to \$3000 to integrate animals on the farm and follow sustainable practices like rotational grazing, silvopasture, and bale grazing.

Wellington Rural Water Quality Programme

The Wellington Rural Water Quality Programme, launched in 1999, offers Wellington County farmers financial and technical support to carry out self-initiated projects aimed at conserving water resources. One of the primary goals of the project is to assist farmers in making the transition to climate-friendly management practices by forming relationships with regional agricultural organizations (Wellington County, 2020). The Grand River Conservation Authority oversees and administers the programme, which is sponsored by the County. County residents say this programme offers a strong starting point to accomplish emissions reductions on farms through a variety of internal and external engagement initiatives (Wellington County, 2020). Some of the activities that are supported by this programme include: a) maintaining 63849 kg of phosphorus on the landscape annually since 1999; b) planting trees on 1460 acres to create windbreaks and buffers for wetlands and streams; c) modernising or decommissioning water wells to protect groundwater; d) enclosing approximately 5,000 animals through fencing projects; e) establishing buffers and stabilising banks along 48 km of watercourse; and f) enhancing 193 manure storage facilities.

Green Legacy Programme, Wellington County

The original aim of the Green Legacy Programme was to plant 150,000 trees in honour of the county's 150th anniversary in 2004. Since then, the programme has continued to grow and is now the largest municipal tree planting initiative in North America. In 2022, Green Legacy planted three million native trees and bushes. The programme involves a variety of partners, community members, and volunteers and aims to strengthen community perceptions of the importance of trees and the environment. Furthermore, the programme provides green infrastructure that provides a number of environmental benefits including climate change mitigation and adaptation, erosion control, and providing living snow fences and wind breaks.

Key Stakeholders

In addition to the City of Guelph and Wellington County, there are a number of other key stakeholders involved in agri-food systems planning in Guelph, including:

- University of Guelph, Ontario Agriculture College;
- Smart Cities Office, Our Food Future, 10C Shared space;
- Food System Resiliency Table;
- The SEED;
- Arrell Food Institute; and
- Federation of Canadian Municipalities.

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6.5 County of Brant

The County of Brant is a single-tier municipality located in southwestern Ontario and is a part of the Greater Golden Horseshoe (GGH), one of the fastest growing regions in North America (Government of Ontario, 2022). The population of the County of Brant increased by 10.8% from 2016 to 2021, from 35,640 people to 39,474 (Statistics Canada, 2022). The average household size is 2.7 people (Statistics Canada, 2021).

The County of Brant has a total land area of 817 in square kilometres and a population density of 43.5 per square kilometre (Statistics Canada, 2022). Despite the fact that the County of Brant is widely known for being situated around the City of Brantford, the municipality is also acclaimed for its significant agricultural community, rural villages, and indigenous roots. The County is named after the legendary Mohawk Chief, Joseph Brant Thayendanegea, who established the Mohawk Village in what is now the City of Brantford (Destination Ontario, 2024). The Six Nations of the Grand River Territory borders the County of Brant and is the only reserve in North America where all six Haudenosaunee nations live together (Six Nations of the Grand River, 2024).

Agri-Food Challenges

The County of Brant has a vibrant rural area consisting of many different types of farms contributing to the agri-food sector. In Brant there are 669 farms which cover over 148,590 acres of farmland and generate over \$278 million of Farm Cash Receipts (OMAFRA, 2022). Fruit and vegetables, soybeans, and dairy products continue to be the top three commodities contributing to the agri-food sector in Brant and 14% of farms sell directly to the consumer (OMAFRA, 2022). Looking more broadly at the agri-food sector in Brant, there are 1398 local agri-food business establishments which provide employment for 8,730 workers (OMAFRA, 2022). The County of Brant agri-food sector is thriving and produces almost twice as much as is consumed locally for both crop and animal products. Looking to the future, 16% of farm operators are using renewable energy producing systems and 15% of farm operators have written a succession plan for the next generation (OMAFRA, 2022).

In 2023, the Brant County Health Unit (BCHU) released a report on Food Affordability in Brant County that reflected the most recent local data on food insecurity and how to address the issue. The key messages that were stated in the report include:

- The Nutritious Food Basket survey demonstrates that low-income individuals and families in Brant are required to pay a significant proportion of their income on food and shelter, leaving them with limited or no funds to pay for other necessities.
- One in six households in Brant are considered food insecure (meaning they have inadequate access to nutritious food due to a lack of money).
- Long-term, income-based strategies are needed to help individuals and families afford the cost of living. (BCHU, 2023)

Initiatives

Agriculture is one of the largest sectors in the County of Brant. The Economic Development Department is focusing on education, diversification, and leveraging opportunities like agri-tourism to support agri-food sector growth as it is a fundamental staple in the community. One tool that has been used in the initiatives listed below is the Brant Farms for All marketing brand. This tool is used by the County of Brant to promote on-farm diversified uses, local markets, and agri-businesses (County of Brant, 2022).

On Farm Diversified Uses

The On-Farm Diversified Use (OFDU) Project was established by the Development Services Department in the fall of 2020 to help farmers in the County of Brant have the opportunity to diversify their income and expand their businesses with the support of land-use policies in the County of Brant. By adding agricultural, agriculture-related, and on-farm diversified uses to their operations, farmers can enhance their land base and contribute to a thriving agricultural economy in their community (County of Brant, 2020). The project guide outlines OFDU permitted uses, requirements, zoning by-laws, and other frequently asked questions farmers and producers may have about the process of planning and applying for an OFDU.

Farm & Market Guide

The small rural villages within Brant have many farms that grow and sell locally produced food to residents. During the COVID-19 pandemic the demand for local food increased and this prompted a “support local” campaign by the Economic Development and Tourism Department. The department created a Farm & Market Guide for residents and tourists where they can visit and tour local farms and purchase from their market stand or store (County of Brant, 2021).

Brant Eats!

Launched on February 8, 2024, Brant Eats! is a campaign developed by the County of Brant Tourism Department to celebrate and promote the variety of culinary offerings that are offered throughout the community (County of Brant, 2024). The County of Brant website elaborates on the project and explains that “Brant Eats! will not only highlight the culinary excellence of our local restaurants but also strengthen our community's spirit by bringing people together through their shared love of good food and good times” (County of Brant, 2024). Additionally, an interactive map and restaurant guide was developed to help residents and visitors navigate their way through the county to find their preferred choice of culinary adventure (County of Brant, 2024).

Key Stakeholders

Agricultural Advisory Committee (AAC) gives advice on rural planning, policies, and agriculture issues in County of Brant. They connect with farmers and work on programs to improve agricultural strategies in the county. They also collaborate with community groups and agencies to achieve these goals (County of Brant, 2023).

Brant County Federation of Agriculture is a group of volunteer farmers who educate members, advocate for local agriculture, and award scholarships to high school and post secondary students. They support consumer education on Brant County farm products while also giving back to their rural community (BCFA, n.d).

Brant Food System Coalition aims to create a strong, fair, and sustainable local food system for Brant County. Their goals include leading the local food movement, addressing food system needs, building partnerships, raising awareness, advocating for supportive policies, collaborating across sectors, learning from food systems work being done in other municipalities and all orders of government, supporting food sovereignty, and guiding leaders in taking action on behalf of the Coalition (Feed Brant, 2018).

Sustainable Brant aims to protect farmland, nature, and water in Brant County and Brantford. They support responsible growth and transparent government at all levels. Additionally, they support the prevention of urban sprawl and to make sure the land is used wisely for a sustainable future (Better Brant, 2024).

6.6 City of Buffalo and Erie County, New York

The City of Buffalo is part of Erie County, located in the western part of New York State, on the eastern end of Lake Erie and the Niagara River, sharing land and water borders with Canada. The region has a similar climate to Southwestern Ontario, and benefits from many of the shared natural resources found within the Great Lakes Regions. The City of Buffalo supports a population of over 270,000 people, making up just over 25 percent of Erie County's population (US Census, 2023). A major urban centre, the City of Buffalo has grown from a port city to a shipping and trade hub for several surrounding cities. Outside of the city, Erie County encompasses many rural towns.

The City of Buffalo has a diverse economy, and supports many different industries throughout the region. Buffalo is known as a “Rustbelt City” with a deep history of manufacturing different steel, automotive, plastics, and agricultural products, but it now also has a large service sector (Raja et al., 2014). The City of Buffalo has also been shaped by the recession of 2008 and the COVID-19 pandemic, both of which emphasized the need for city planners to develop and implement food system plans, policies and programs to support the population amidst economic uncertainty. The City of Buffalo has emerged as a leader in food systems planning, starting with a focus on food systems since the early 2000s and now working at a regional agri-food systems level with Erie County to ensure food security, education, affordability and accessibility for generations to come (Raja et al., 2014).

Agri-Food Challenges

Buffalo has faced different agri-food challenges which has led to planning and public policy within the city and the broader region (Raja et al., 2014). Challenges range from suburbanization, which further separated consumers from farms and food products, to the advancement of food science and technology that have complicated food origins and sources for consumers (Raja et al., 2014). Buffalo is also impacted by farmland loss, food insecurity, population decline, increased vacant lots, pesticide use and environmental concerns, health concerns and diet related diseases, unemployment, and changing market demands with a restaurant dominated food retail environment (Raja et al., 2014). As a result of these challenges, the City of Buffalo focuses on the ability of agri-food systems planning to provide economic opportunities, community health, education and well-being (Raja et al., 2014; BECLFAP, 2020).

Initiatives

Agri-food systems planning has been addressed in the City of Buffalo and Erie County through several different initiatives, and specifically the Erie County Agricultural and Farmland Protection Plan (ECAFP) (2012), One Region Forward – Growing Together Report (ORF-GT) (2015), the City of Buffalo Unified Development Ordinance (CBUDO) (2016), and the Buffalo and Erie County Local Food Action Plan (BECLFAP, 2020). The main themes of these initiatives are land use planning, economic development, and education.

Land Use Planning Initiatives

A focus on land use planning has been present since the start of food systems planning in Buffalo and Erie County. The Erie County Agricultural and Farmland Protection Plan (ECAFP) focuses on protecting farmland, rights to farm, preserving development rights on farmland for farming, and improving viability of farms through public works and drainage insurance (ECAFP, 2012). One Region Forward – Growing Together Report (2015) focuses on underutilised land and promotes long term leases on public owned land in Buffalo for community gardens to support food accessibility. Further, the Unified Development Ordinance makes it easier for properties to change functions despite zoning as long as it supports public interest and welfare as well as the development of urban agriculture, food processors, and distributors on city lands (ORF-GT, 2015; CBUDO, 2016). The city and county have also developed a food policy council, which convenes different stakeholders in agri-food systems to promote more cooperation on agri-food systems planning (ORF-GT, 2015). Buffalo also supports the sustainability of farmland through large-scale renewable energy projects that provide additional income streams as well connecting different aged farmers, and supporting future farmers with education and training (BECLFAP, 2020).

Economic Development Initiatives

From an economic development perspective, Erie County supports agri-tourism, using farmers markets to reach new populations and to promote local food, as well as developing an agricultural brand for regional specialty crops (ECAFP, 2012). The region also uses local procurement to support local food, identifying a target of 20% of state and county institutional food spending being procured from local farmers (ORF-GT, 2015). Further, both Erie County and the City of Buffalo provide funding to support food-focused small businesses, start ups, farm schools, community gardens, and mobile food stands, and additional financial incentives for low-food access areas (BECLFAP, 2020).

Educational and Community Development Initiatives

Erie County and the City of Buffalo also support the local agri-food system through educational and community development initiatives. One initiative focuses on “farm-to-table” programming within the region's schools to provide kids with nutritional education, agricultural education through field trips and hands-on experiences, and helping offer local food in schools (ECAFP, 2012). Further, the “Healthy Corner Stores” programs addresses the lack of healthy accessible food by supporting corner stores in areas with limited food retail options, by helping offer and subsidize local produce and healthy food (ORF-GT, 2015). The region also supports mobile farmers markets to help reach populations in areas with low food access and low vehicle ownership, connecting farms to consumers where they may not have reached before (ORF-GT, 2015). The City of Buffalo has also developed a database of vacant and abandoned urban land parcels that could be used to help expand local food production and processing within city limits (ORF-GT, 2015). Lastly, the City and the County increase food accessibility and connectivity through public works, ensuring food retail areas are walkable and served with bike lanes (BECLFAP, 2020).

Key Stakeholders

Agri-food systems planning in Buffalo and Erie County involves many different stakeholders, including:

- The Food Policy Council of Buffalo and Erie County;
- Massachusetts Avenue Project;
- University of Buffalo;
- City of Buffalo Mayor’s Office of Strategic Planning;
- Local School Districts;
- Erie County Department of Environment and Planning; and
- Erie County Agriculture and Farmland Protection Board.

7.0 Future Considerations

The agri-food sector in Ontario is one of the largest and most diverse in Canada (OMAFRA, 2022). Ontario leads the nation in several commodities, including soybeans, corn, and greenhouse products (Statistics Canada, 2021). Furthermore, Ontario's agri-food sector contributes over \$47 billion to provincial GDP and \$19.6 billion in agri-food exports (OMAFRA, 2022). Beyond economic contributions, Ontario's agri-food sector is diverse with more than 4,500 food and beverage manufacturing businesses, 48,000 farms, and 200 different food and farm commodities (OMAFRA, 2022).

Despite the significance of Ontario's agri-food sector, both the number of farms and the total farm area declined between 2016 and 2021 (Statistics Canada, 2021). The agri-food sector is facing challenges related to extreme weather events, changing climate, the introduction of new diseases, changing practices, land grabbing, development pressures, and labour shortages, among others. Governments at all levels play an important role in responding to and addressing these challenges, in addition to providing support for sustainable transitions in the agri-food sector. While the provincial government provides a policy framework, municipal governments have the ability to determine how best to implement policies in their jurisdiction and have the ability to pursue policies, programs, and plans to support and respond to the agri-food sector.

Municipal agri-food systems planning is a relatively new field of work within the planning profession. This toolkit is designed to provide municipal planning staff and councils in Ontario a reference point for carrying out this work, including an overview of agri-food systems planning policy in Ontario, a resource directory, ten actions municipalities can take in support of agri-food systems, and a number of relevant case studies and examples. Municipalities have an important role in supporting local and regional agri-food systems that are sustainable, equitable, and robust. This toolkit provides a starting point for municipalities carrying out this important work.

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Appendix A

Agri-Food System Planning Resource Directory

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Ontario Agri-Food System Planning Resource Directory

PROVINCIAL POLICY GUIDANCE AND CONTACTS

(Note: This resource directory is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)

Resource Title	Ministry	Resource Type	Description	Link
Implementation Procedures for the Agricultural System in Ontario’s Greater Golden Horseshoe	OMAFRA	Policy Guidance	This document aims to assist municipalities and other stakeholders in supporting a robust agri-food sector by integrating farmland protection with economic development. It provides guidance on implementing provincial Agricultural System policies, with an emphasis on job creation, local food promotion, and trade and economic opportunities.	Link: Implementation Procedures for the Agricultural System in Ontario’s Greater Golden Horseshoe
Guidelines on Permitted Uses in Ontario’s Prime Agricultural Areas	OMAFRA	Policy Guidance	OMAFRA's Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas (2016) provides more detailed policy guidance on permitted uses in prime agricultural areas.	Link: Guidelines on Permitted Uses in Ontario’s Prime Agricultural Areas
The Agricultural System	OMAFRA	Policy Guidance	OMAFRA's resource page about the agricultural systems approach, including links to related provincial policies and resources.	Link: The Agricultural System
Minimum Distance Separation (MDS) resource document	OMAFRA	Policy Guidance	Includes updated MDS I and II formulae for determining recommended distances between livestock facilities, manure storage, anaerobic digesters, and other land uses. It also provides detailed MDS definitions, factors, implementation guidelines, and calculation forms.	Link: Minimum Distance Separation (MDS) resource document
The Farming and Food Production Protection Act, 1998 and nuisance complaints	OMAFRA	Policy Guidance	Normal Farm Practices/ FFPPA explains how the FFPA protects “normal farm practice” in Ontario and how conflicts, nuisances and bylaws are handled.	Link: The Farming and Food Production Protection Act, 1998 and nuisance complaints
Agricultural Impact Assessments	OMAFRA	Policy Guidance	OMAFRA's resource page about agricultural impact assessments including the draft Guidance Document for Agricultural Impact Assessments.	Link: Agricultural Impact Assessments
Draft Guidance Document for Agricultural Impact Assessments	OMAFRA	Policy Guidance	This document provides criteria for conducting AIAs in Ontario, required for certain developments within prime agricultural areas. It aims to protect agriculture by assessing potential impacts of non-agricultural developments and offering strategies to mitigate them.	Link: Draft Guidance Document for Agricultural Impact Assessments
Nutrient Management	OMAFRA	Policy Guidance	OMAFRA also provides Nutrient Management resources.	Link: Nutrient Management
Agricultural system and natural heritage system policies in Ontario's provincial plans	OMAFRA	Policy Guidance	Explains the relationship between the Natural Heritage System and the Agricultural System in Ontario.	Link: Agricultural system and natural heritage system policies in Ontario's provincial plans
Ministry of Agriculture, Food and Rural Affairs	OMAFRA	Policy Guidance	Links to key agencies & legislation.	Link: OMAFRA landing page
Agricultural Land Use	OMAFRA	Policy Guidance	OMAFRA's list of relevant Agricultural Land Use policies in Ontario.	Link: Agricultural Land Use
Land Evaluation and Area Review (LEAR)	OMAFRA	Policy Guidance	A methodology used to identify and designate prime agricultural areas.	Link: Land Evaluation and Area Review (LEAR)
Agricultural Land Evaluation System (ALES)	OMAFRA	Policy Guidance	A methodology used to identify and designate prime agricultural areas.	Link: Agricultural Land Evaluation System (ALES)
Drainage resources	OMAFRA	Policy Guidance	OMAFRA resources regarding drainage, including tile drainage contractors, the Agricultural Drainage Infrastructure Program (ADIP), the top 10 drainage problems between rural neighbours, and more.	Link: Drainage resources
OMAFRA Rural Planners	OMAFRA	Contacts	Contact information for OMAFRA's Rural Planners by region.	Link: OMAFRA Rural Planners
OMAFRA Community Economic Development Unit	OMAFRA	Contacts	Contact information for OMAFRA's Community Economic Development Unit by region.	Link: OMAFRA Community Economic Development Unit

****A list of relevant provincial policies is included in Section 2.0 of this toolkit.**

Ontario Agri-Food System Planning Resource Directory

DATA, MAPPING AND RESEARCH

(Note: This resource directory is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)

Resource Title	Author/Organization	Resource Type	Jurisdiction	Description	Link
Ontario agriculture and food statistics	OMAFRA	Data & Mapping	Ontario	Resource for statistics on crops, livestock and poultry, dairy, food and beverage, counties, farm finance, trade and more.	Link: Ontario agriculture and food statistics
ConnectON	ConnectON	Data & Mapping	Ontario	Geo-mapped data and dashboards to support investment, business retention and growth.	Link: ConnectON
Ontario Agricultural Systems Portal	OMAFRA	Data & Mapping	Ontario	Public-facing data and mapping portal that provides statistics and spatial information about the agri-food supply chain.	Link: Ontario Agricultural Systems Portal
Ontario Geohub	MNRF	Data & Mapping	Ontario	Source of geospatial data.	Link: Ontario Geohub
AgMaps	OMAFRA	Data & Mapping	Ontario	Interactive online application that allows you to create custom maps and find agricultural information.	Link: AgMaps
County Profiles: Agriculture, Food and Business	OMAFRA	Data & Mapping	Ontario	County, regional, and township profiles prepared using Census of Agriculture data.	Link: County Profiles: Agriculture, Food and Business
Buy Local Initiatives across Ontario	Sustain Ontario	Data & Mapping	Ontario	Regional buy local initiatives from across Ontario.	Link: Buy Local Initiatives across Ontario
Census of Agriculture	Stats Canada	Data & Mapping	Canada	Data regarding the physical, economic, social and environmental characteristics of Canada's agriculture industry (data collected every five years).	Link: Census of Agriculture
Annual Crop Inventory	Agriculture and Agri-Food Canada	Data & Mapping	Canada	Crop inventory data that can be used to generate annual crop type digital maps.	Link: Annual Crop Inventory
Land Use Hub	Canadian Agri-Food Policy Institute	Data & Mapping	Canada	Agriculture Web Mapping Application Tool showing agricultural land attributes, management practices, and key agri-environmental indicators.	Link: CAPI Land Use Hub
Dr. Wayne Caldwell Research Website	University of Guelph	Research	Ontario	Repository of Dr. Wayne Caldwell's research projects and publications. Dr. Caldwell is a Registered Practicing Planner and Professor Emeritus from the University of Guelph. His research is focused on rural land use planning and administration, agriculture, healthy rural communities, farmland preservation, and more.	Link: Dr. Wayne Caldwell Research Website
Dr. Sara Epp Research Website	University of Guelph	Research	Ontario	Repository of Dr. Sara Epp's research projects and publications. Dr. Epp is an Associate Professor in the School of Environmental Design and Rural Development at the University of Guelph. Her research looks at rural communities in southern and northern Ontario, looking at issues related to farmland loss, agricultural viability, land use conflict, and social aspects of rural life.	Link: Dr. Sara Epp Research Website
Planning for Sustainable Food Systems in Canada	Kwantlen Polytechnic University	Research	Canada	The Kwantlen Polytechnic University Institute for Sustainable Food Systems has a number of on-going projects related to agri-food systems planning.	Link: Planning for Sustainable Food Systems in Canada
Food Systems Planning and Healthy Communities Lab	University of Buffalo	Research	USA	The Food Systems Planning and Healthy Communities Lab, led by Dr. Samina Raja conducts research that looks at the role of local government policy in supporting equitable, sustainable, and healthy communities.	Link: Food Systems Planning and Healthy Communities Lab

Ontario Agri-Food System Planning Resource Directory

RELEVANT ORGANIZATIONS AND NETWORKS

(Note: This resource directory is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)

Organization Name	Organization Type	Jurisdiction	Description	Link
Food Communities Network – Réseau Communautés Nourricières (FCN-RCN)	Network / Mailing List	Canada	Network to facilitate communities sharing coast-to-coast-to-coast with each other ideas, knowledge, tools and experiences on building food resiliency and decreasing food insecurity at a community-level.	Link: Welcome to the Food Communities Network Link: Sign up to Food Communities Network
OPPI Planners Connect	Organization - Planning	Ontario	Planners Connect is OPPI’s members-only community forum, where you are encouraged to discuss any and all topics related to the planning profession.	Link: OPPI Planners Connect
Regional Planning Commissioners	Organization - Planning	Ontario	Upper and single-tier municipal members provide planning services and give planning advice to municipal councils.	Link: Regional Planning Commissioners
Alternative Land Use Services (ALUS)	Organization - Stewardship	Canada	Program that works with farmers to create, restore and enhance new acres of nature.	Link: Alternative Land Use Services (ALUS)
Ontario Soil & Crop Improvement Association	Organization - Stewardship	Ontario	Administers portions of the Canadian Agricultural Partnership and Training Opportunities.	Link: Ontario Soil & Crop Improvement Association Link: Canada-Ontario Environmental Farm Plan
Ontario Farmland Trust	Organization - Stewardship	Ontario	A Land Trust dedicated to protecting agricultural, natural and cultural landscapes of food production in Ontario.	Link: Ontario Farmland Trust
FarmLINK	Organization - Ec Dev	Canada	Land listing and linking tool designed to connect those looking for land and those who have land.	Link: FarmLINK
Sustain Ontario	Organization - Ec Dev	Ontario	Cross-sectoral alliance that promotes healthy food and farming.	Link: Sustain Ontario
Greenbelt Foundation	Organization - Regional	Ontario	Charitable organization, and receives funding from the Government of Ontario and other public and private support to make strategic investments that bolster the richness of life in the Greenbelt.	Link: Greenbelt Foundation
Golden Horseshoe Food and Farm Alliance	Organization - Regional	Ontario / GGH	Partnership between municipalities, Federations of Agriculture, Conservation Authorities, the Greenbelt Fund, Durham College and Niagara College, the Holland Marsh Growers and the food industry.	Link: Golden Horseshoe Food and Farm Alliance
Northern Ontario Farm Innovation Alliance	Organization - Regional	Ontario / Northern	Organization dedicated to advancement of agricultural research and innovation in Northern Ontario.	Link: Northern Ontario Farm Innovation Alliance
Farm North	Organization - Regional	Ontario / Northern	An information hub for agriculture in Northern Ontario.	Link: Farm North
Rural Agri-Innovation Network (RAIN)	Organization - Regional	Ontario / Northern	The Rural Agri-Innovation Network (RAIN) is a division of Sault Ste. Marie Innovation Centre with support from farmers and communities to enhance the agriculture and food sector in Algoma.	Link: Rural Agri-Innovation Network (RAIN)
Ecological Farmers Association of Ontario (EFAO)	Organization - Farm	Ontario	Supports farmers to build resilient ecological farms and grow a strong knowledge-sharing community.	Link: Ecological Farmers Association of Ontario
Christian Farmers Federation of Ontario (CFFO)	Organization - Farm	Ontario	Accredited farm organization in Ontario.	Link: Christian Farmers Federation of Ontario
National Farmers Union - Ontario (NFU-O)	Organization - Farm	Ontario	Accredited farm organization in Ontario.	Link: National Farmers Union - Ontario (NFU-O)
Ontario Federation of Agriculture (OFA)	Organization - Farm	Ontario	Accredited farm organization in Ontario.	Link: Ontario Federation of Agriculture Link: County and Regional Federations

Ontario Agri-Food System Planning Resource Directory

AGRI-FOOD SYSTEMS PLANNING TOOLKITS AND GUIDES

(Note: This resource directory is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)

Resource Title	Author/Organization	Jurisdiction	Description	Link
Agriculture Matters – A Guide for Municipal Councillors and Staff	Ontario Federation of Agriculture	Ontario	An overview of issues affecting farm businesses today & opportunities for local communities.	Link: Agriculture Matters – a Guide for Municipal Councillors and Staff
Supporting Agriculture in your Community	Ontario Federation of Agriculture	Ontario	Resources to assist municipalities, regions, and community organizations in supporting the agricultural sector.	Link: Supporting Agriculture in your Community
Always in Season	Ontario Federation of Agriculture	Ontario	A toolkit for communities to guide them through potential activities, key performance metrics, funding opportunities, and ways to collaborate to support the agri-food sector.	Link: Always in Season
Agricultural Advisory Committees in the Greater Golden Horseshoe	Friends of the Greenbelt Foundation	Ontario/GGH	A report that reviews the structure of AACs, their mandates, membership, and general experiences.	Link: Agricultural Advisory Committees in the Greater Golden Horseshoe
Agriculture Economic Development - A Resource Guide For Communities	OMAFRA	Ontario	To help economic developers, land-use planners, municipal councils and community leaders explore agriculture as an economic development opportunity.	Link: Agriculture Economic Development - A Resource Guide For Communities
Growing the Agri-Food Sector in Northern Ontario	OMAFRA	Ontario / Northern	A strategic framework to guide decision-making and investment planning in Northern Ontario until 2036.	Link: Growing the Agri-Food Sector in Northern Ontario
Rural and North	OMAFRA	Ontario / Northern	Information about Northern Ontario, agriculture and local food.	Link: Rural and North
Facilitating the Agricultural and Local Food Sector in Northern Ontario: A Municipal Toolkit	University of Guelph	Ontario / Northern	Includes 10 municipal actions to support local food, policies, resources & initiative case studies.	Link: Facilitating the Agricultural and Local Food Sector in Northern Ontario: A Municipal Toolkit
Aggregate & Agriculture Municipal Toolkit	University of Guelph	Ontario	A toolkit to help municipalities enhance the relationship between aggregates and agriculture.	Link: Aggregate & Agriculture Municipal Toolkit
Planners Guide to Community and Regional Planning: Transforming Food Environments, Facilitating Healthy Eating	American Planning Association	USA	A guide on community and regional food planning including community efforts, national survey of planners, six community case studies, understanding and measuring food environments, and planning strategies.	Link: Planners Guide to Community and Regional Planning: Transforming Food Environments, Facilitating Healthy Eating
Growing Local: A Community Guide to Planning for Agriculture and Food Systems	Growing Food Connections	USA	A guide to help communities remove public policy barriers and advance policy solutions to strengthen community food systems.	Link: Growing Local: A Community Guide to Planning for Agriculture and Food Systems
Checklist - Is your community farm friendly?	Growing Food Connections	USA	A checklist to gauge local support for food in your community.	Link: Checklist - Is your community farm friendly?
Food System Resilience: A Planning Guide for Local Governments	Johns Hopkins Center for Livable Future	USA	A guide to provide local governments with resources to build local food system resilience and to do so in a way that promotes an equitable and just food system.	Link: Food System Resilience: A Planning Guide for Local Governments
Planning for Agriculture: A Guide for Connecticut Municipalities	American Farmland Trust & Connecticut Department of Agriculture	USA	A framework that will inspire innovative ways municipalities can promote agriculture and food systems in their communities.	Link: Planning for Agriculture: A Guide for Connecticut Municipalities

Ontario Agri-Food System Planning Resource Directory

FUNDING, PUBLICATIONS, PODCASTS, WEBINARS & OTHER RESOURCES

(Note: This resource directory is intended to provide a starting point for planning staff and councils working on agri-food systems planning in their municipality and is not an exhaustive list.)

Resource Title	Author/Organization	Resource Type	Jurisdiction	Description	Link
Rural Economic Development (RED) Program	OMAFRA	Funding	Ontario	Funding to help create jobs and boost growth in your rural community.	Link: Rural Economic Development (RED) Program
Plan Canada Summer 2023, FOOD	Canadian Institute of Planners	Publication	Canada	The Summer 2023 issue of Plan Canada aims to explore the changes and initiatives that have taken place around food and planning.	Link: Plan Canada Summer 2023, FOOD
Farmtario Magazine	Farmtario	Publication	Ontario	Agriculture and farming news.	https://farmtario.com/
The Real Dirt on Farming	Farm & Food Care	Publication	Canada	A publication that addresses questions and misconceptions about Canadian food and farming.	https://www.realdirtonfarming.ca/
Planning for Sustainable Food Systems: Findings from a Survey of Canadian Planners and Practitioners	Kwantlen Polytechnic University	Publication	Canada	A research report prepared by the Institute for Sustainable Food Systems (ISFS) and the Canadian Institute of Planners looking to evaluate the state of food systems in planning practice and generate information to support planners and advance the food systems planning in Canada.	Link: Planning for Sustainable Food Systems: Findings from a Survey of Canadian Planners and Practitioners (Full Report) Link: Planning for Sustainable Food Systems: Findings from a Survey of Canadian Planners and Practitioners (Summary)
Sow and Grow Podcast	Who Will Feed Us Podcast	Podcast	Ontario	Explores the forces that shape Canadian agriculture and the solutions needed to build a more just and ecologically sustainable food system.	Link: Sow and Grow Podcast
Municipal Capacity to Respond to Agricultural Issues	University of Guelph	Webinar	Ontario	Key findings from their research on assessing the capacity of Greenbelt municipal planning departments to respond to agricultural issues.	Link: Municipal Capacity to Respond to Agricultural Issues Webinar
Ontario Farmland Trust Webinars	Ontario Farmland Trust	Webinar	Ontario	Webinars to explore the pressures on farmland, learn about solutions, and share innovative ideas.	Link: Ontario Farmland Trust Webinars
Agriculture Economic Development and Planning Community of Practice Webinars	OMAFRA / OFA	Webinar	Ontario	Webinar topics will be based on relevant municipal policies, procedures and programming impacting the agricultural sector.	Link: Agriculture Economic Development and Planning Community of Practice Webinars
Canadian Agri-Food Policy Institute Dialogues	Canadian Agri-Food Policy Institute	Webinar	Canada	Webinars looking at a range of policy issues relevant to agri-food systems.	Link: Canadian Agri-Food Policy Institute Dialogues
Planning Together: Student Symposium – Planning & Food Systems	Canadian Institute of Planners	Webinar	Canada	Student research looking at the intersection of agriculture, food, and planning.	Link: Planning Together: Student Symposium – Planning & Food Systems
Indigenous Food Systems Network	Working Group on Indigenous Food Sovereignty	Other Resources	Canada	A resource to allow individuals and groups involved with Indigenous food related action, research, and policy reform to network and share relevant resources and information.	Link: Indigenous Food Systems Network
Land Trust Alliance Resource Center	Land Trust Alliance	Other Resources	USA	One-stop-shop for volunteers, staff and board members of land trusts and other conservationists to learn, connect and grow.	Link: Land Trust Alliance Resource Center
Food Systems Division	American Planning Association	Other Resources	USA	A coalition of planners and allied professionals who have come together to advance food systems planning at the local, regional, state, or national level.	Link: Food Systems Division

Appendix B

Relevant Definitions from the PPS

DRAFT

Relevant Definitions from the PPS

Agricultural condition: means a) in regard to specialty crop areas, a condition in which substantially the same areas and same average soil capability for agriculture are restored, the same range and productivity of specialty crops common in the area can be achieved, and, where applicable, the microclimate on which the site and surrounding area may be dependent for specialty crop production will be maintained or restored; and b) in regard to prime agricultural land outside of specialty crop areas, a condition in which substantially the same areas and same average soil capability for agriculture are restored. (PPS, 2020)

Agricultural System: A system comprised of a group of inter-connected elements that collectively create a viable, thriving agricultural sector. It has two components: a) An agricultural land base comprised of prime agricultural areas, including specialty crop areas, and rural lands that together create a continuous productive land base for agriculture; and b) An agri-food network which includes infrastructure, services, and assets important to the viability of the agri-food sector. (PPS, 2020)

Agricultural uses: means the growing of crops, including nursery, biomass, and horticultural crops; raising of livestock; raising of other animals for food, fur or fibre, including poultry and fish; aquaculture; apiaries; agro-forestry; maple syrup production; and associated on-farm buildings and structures, including, but not limited to livestock facilities, manure storages, value-retaining facilities, and accommodation for full-time farm labour when the size and nature of the operation requires additional employment. (PPS, 2020)

Agriculture-related uses: means those farm-related commercial and farm-related industrial uses that are directly related to farm operations in the area, support agriculture, benefit from being in close proximity to farm operations, and provide direct products and/or services to farm operations as a primary activity. (PPS, 2020)

Agri-food network: Within the agricultural system, a network that includes elements important to the viability of the agri-food sector such as regional infrastructure and transportation networks; on-farm buildings and infrastructure; agricultural services, farm markets, distributors, and primary processing; and vibrant, agriculture-supportive communities. (PPS, 2020)

Minimum distance separation formulae: means formulae and guidelines developed by the Province, as amended from time to time, to separate uses so as to reduce incompatibility concerns about odour from livestock facilities. (PPS, 2020)

Normal farm practices: means a practice, as defined in the Farming and Food Production Protection Act, 1998, that is conducted in a manner consistent with proper and acceptable customs and standards as established and followed by similar agricultural operations under similar circumstances; or makes use of innovative technology in a manner consistent with proper advanced farm management practices. Normal farm practices shall be consistent with the Nutrient Management Act, 2002 and regulations made under that Act. (PPS, 2020)

On-farm diversified uses: means uses that are secondary to the principal agricultural use of the property, and are limited in area. On-farm diversified uses include, but are not limited to, home occupations, home industries, agritourism uses, and uses that produce value-added agricultural products. Ground-mounted solar facilities are permitted in prime agricultural areas, including specialty crop areas, only as on-farm diversified uses. (PPS, 2020)

Prime agricultural area: means areas where prime agricultural lands predominate. This includes areas of prime agricultural lands and associated Canada Land Inventory Class 4 through 7 lands, and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture. Prime agricultural areas may be identified by the Ontario Ministry of Agriculture and Food using guidelines developed by the Province as amended from time to time. A prime agricultural area may also be identified through an alternative agricultural land evaluation system approved by the Province. (PPS, 2020)

Prime agricultural land: means specialty crop areas and/or Canada Land Inventory Class 1, 2, and 3 lands, as amended from time to time, in this order of priority for protection. (PPS, 2020)

Rural areas: means a system of lands within municipalities that may include rural settlement areas, rural lands, prime agricultural areas, natural heritage features and areas, and resource areas. (PPS, 2020)

Rural lands: means lands which are located outside settlement areas and which are outside prime agricultural areas. (PPS, 2020)

Specialty crop areas: means areas designated using guidelines developed by the Province, as amended from time to time. In these areas, specialty crops are predominantly grown such as tender fruits (peaches, cherries, plums), grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil, usually resulting from: a) soils that have suitability to produce specialty crops, or lands that are subject to special climatic conditions, or a combination of both; b) farmers skilled in the production of specialty crops; and c) a long-term investment of capital in areas such as crops, drainage, infrastructure and related facilities and services to produce, store, or process specialty crops. (PPS, 2020)

Appendix C

Agri-Food Systems Planning in the Literature

DRAFT

Agri-Food Systems Planning in the Literature

This literature review explores how ideas around agri-food systems planning have changed over time as well as key themes, gaps, and concerns in agri-food systems planning discourse.

A Brief Background Of Agri-Food Systems Planning

While the exact origins of agri-food systems planning is contested (Buchan et al., 2015; Caldwell et al., 2017; Mendes et al., 2011; Vitiello & Brinkley, 2014), most food systems planning researchers would reference Pothukuchi and Kaufman (1999, 2000) as being responsible for introducing food systems into the planning portfolio. However, earlier discussions of agriculture can be traced back to farmland conservation efforts in the 1970s and concerns about the impact of urbanization on agricultural land (Caldwell et al., 2017, Zink et al., 2022). Over the years, concern about the impact of urbanization on agricultural land has continued to grow and become more nuanced.

Today it is widely recognized that agriculture both contributes to and is vulnerable to climate change. Local and regional agri-food systems play an important role in addressing these concerns and contributing to community resilience (Buchan et al., 2015). Food systems are an essential part of community health and well-being and thus can provide a boon to communities when comprehensively planned at the regional level (Hansen et al., 2021). Planners can help support and facilitate sustainable food systems through working with different stakeholders and the community (Hansen et al., 2021).

There are a number of diverse stakeholders involved in all facets of food system operations from production and processing, to distribution and planning (Zink et al., 2022). Figure 2 illustrates the diversity of actors, components, and interactions that can be conceptualized as part of agri-food systems (Caldwell, 2015). The work of municipal planning departments intersects with agri-food systems in multiple and diverse ways. Planners play an important role in engaging with stakeholders across the supply chain in order to create a cohesive vision, and ultimately support a successful and thriving agri-food system (Zink et al., 2022).

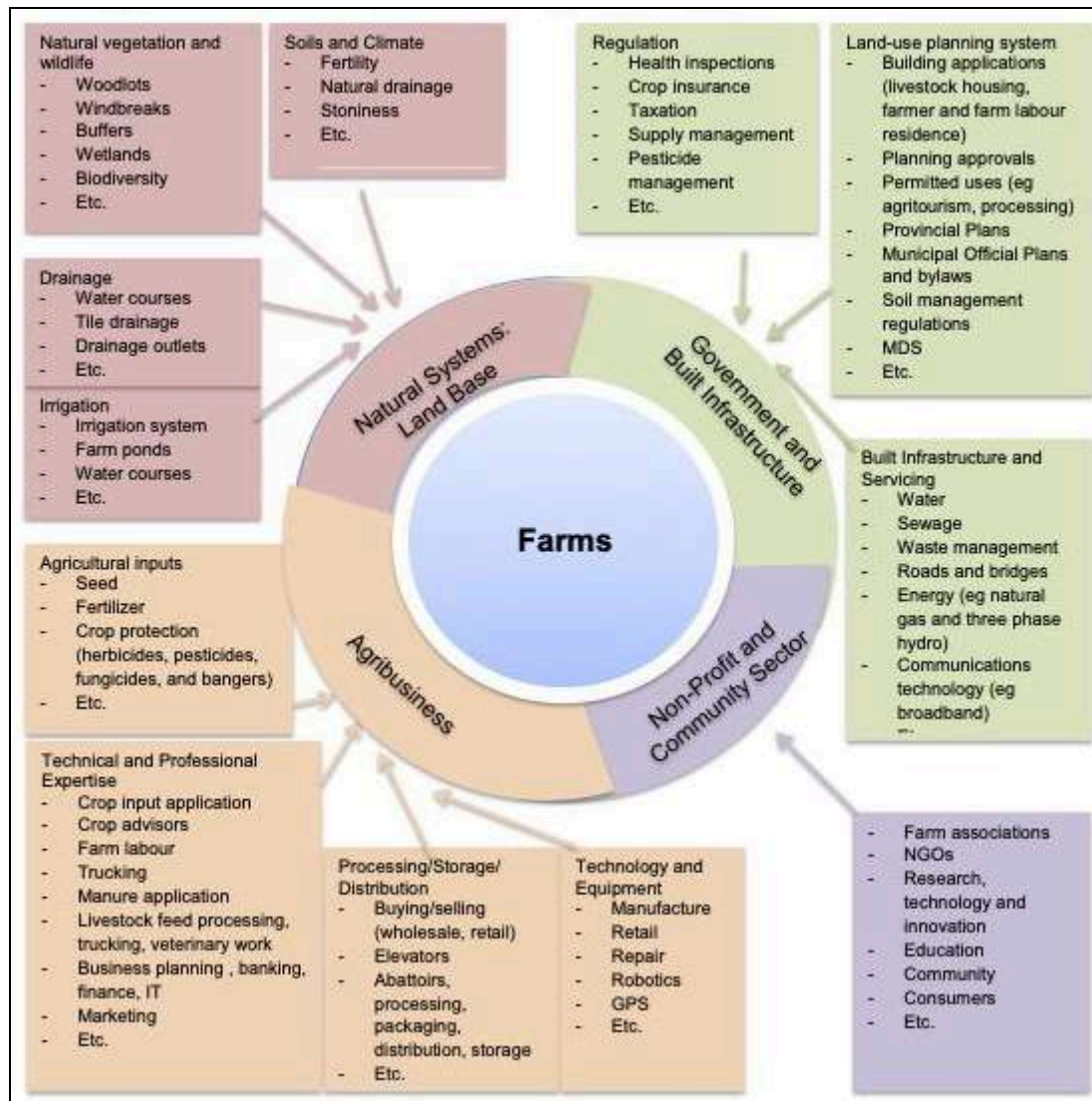


Figure 2 - Components of an agricultural system prepared by Caldwell (2015).

Discussion about Locality and Scale

As public awareness about agri-food systems and sustainability continues to grow, Ontario municipalities must address these concerns to help support their growing population (Hansen et al., 2020). One aspect of planning for local and regional agri-food systems to consider is what “local” means. In the United States, the Farm Act (2008) defines local foods as anything consumed within 400 miles (643 kilometres) of the place it is produced (Buchan, 2015). Looking at another international example, Sweden defines local food as food being sold within 250 kilometres of where it is produced (Buchan et al., 2015). While definitions can vary across regions, there is a collective agreement in the planning profession that local and agri-food systems are important (Hansen et al., 2020, 2021). Local and regional agri-food systems offer several benefits and are generally believed to contribute to livelihoods and wellbeing, fewer GHGs, less travel miles, increased local autonomy, and community vibrancy (Buchan et al., 2015). Despite their importance, local and regional agri-food systems continue to face a number of challenges.

In Ontario, peri-urban farmers face a number of challenges associated with development pressures, including farmland fragmentation, expanding urban boundaries, land speculation, and skyrocketing land prices (Caldwell et al., 2017). Ontario is set to develop thousands of homes in the coming years to support its population, however, historically has failed to mitigate the impacts that growth can have on agri-food systems (Caldwell et al., 2017). Farmland protection and urban agriculture should be a priority for municipalities and need to be addressed from a holistic agri-food system perspective (Caldwell, 2015; Caldwell et al., 2017).

It is also important to consider that agri-food systems span urban and rural communities and thus collaboration and coordination between municipalities and stakeholders should be central to the planning process (Hansen et al., 2020, 2021). Collaboration at a regional level allows planners to more effectively address inefficiencies and inequalities between communities (Hansen et al., 2020, 2021). Taking a more regional approach to agri-food systems planning is supported by Dring et al. (2023) who raise important questions about the mismatch between administrative and agri-food systems boundaries.

The Role of Policy, Advocacy and Planners

There are many ways municipal planners and officials can support agri-food systems. These include supporting local food initiatives delivered via community organizations, and/or government initiatives, such as investing in physical infrastructure, providing funding, and local food programs (Raja et al., 2018; Roseland, 2012). There are also several regulatory approaches that municipalities can take to support agri-food systems, including amending their zoning by-law and official plan (Raja et al., 2018). In their article Buchan et al. (2015) identifies four policy tools for local government planners: “(1) providing resources (e.g., financial, in-kind, and information), (2) undertaking projects and programs (e.g., community gardens, local procurement), (3) advocacy and facilitation, and (4) regulating and establishing policy” (p. 11). These tools can provide guidance and assist in supporting sustainable local and regional agri-food systems (Raja et al., 2018).

For example, urban agriculture can be addressed through supportive planning policies and funding initiatives that support community gardens and farmers markets (Buchan et al., 2015).

Furthermore, planners can support local food systems by utilizing their power within political windows of opportunity to advance policy, advocacy, and accessibility for local sustainable agri-food systems (Buchan et al., 2019). In supporting sustainable agri-food systems municipalities not only support agri-food stakeholders but also the broader community. Agri-food systems planning contributes to making local food more visible and accessible to the public and combating barriers faced in developing and promoting local food systems and food hubs (Buchan et al., 2015).

Food insecurity, food waste, and climate change continue to be critical issues in agri-food systems planning (Hansen et al., 2021). Today, food insecurity impacts over four million Canadians, and the majority of Canadian youth are not eating sufficient fruits and vegetables for a healthy diet (Hansen et al., 2020). Local and regional agri-food systems can help address challenges associated with food access, nutrition, and food sovereignty (Buchan et al., 2019). For example, edible gardens at schools can help provide healthy food for kids and can inspire the next generation farmers, nutritionists, food advocates, and planners (Buchan et al., 2015). Buchan et al. (2019)

suggest that planners can contribute to transformative change by advocating for food as a public good and planning for sustainable local agri-food systems for their communities (Buchan et al., 2019).

Industry Influences

To effectively support agri-food systems, planners must understand their complexity and continue to gain knowledge in this field (Hansen et al., 2021). Agri-food systems are continually evolving and responding to external pressures and innovations (e.g., climate change, technology).

Furthermore, agri-food systems interact with many adjacent systems, such as transportation, labour and training, natural heritage, and economic development, and require practitioners to take a broad regional and systems based approach (Raja et al., 2018). Discussion and concern around the impacts of labour and technology exemplify the complexity of agri-food systems and the diversity of issues agri-food planning practitioners must consider.

Today, much of Canada's commercial agriculture relies on foreign workers provided through the Canadian Seasonal Agricultural Worker Program or the low-wage agricultural stream of the Temporary Foreign Worker Program (Caxaj et al., 2021). While these programs provide a critical source of labour for the Canadian agricultural sector, the programs create precarious conditions for international workers (Caxaj et al., 2021). The agricultural workforce will continue to be the backbone of agri-food systems in Ontario and more research and development must go into supporting individuals who would work in the field.

To provide another example of the complexity of agri-food systems, consider the emergence of lab grown food and vertical agriculture (among other technological advancements). Off-farm food and agriculture industries have the potential to address some supply chain GHG emissions and reduce food miles (Carpenter et al., 2022). Furthermore, urban agriculture and vertical farms can help address farmland shortage and expensive land costs. However, new technologies are far from simple and often require producers to have nuanced understanding of the technology involved and the social, environmental, and economic consequences and opportunities. For example, there

are many different companies worldwide that are working on technologies for controlled-environment agriculture who see their technologies playing an important role in reducing the amount of land required for agriculture (Al-Kodmany, 2018). At the same time, these technologies require high-tech systems that maintain soil quality and facilitate hydrological processes to support high yield production (Al-Kodmany, 2018).

Agri-food systems are constantly evolving and adapting and as a result planners and municipal governments must engage with all stakeholders working together to feed the future.

Appendix K - Statistical Analysis

----- APPENDIX K: R SCRIPT AND OUTPUT -----

```
## Hypothesis 1 – TIER AND CAPACITY – Null hypothesis is that “tier”
and “capacity” are independent
table(planner_survey$capacity, planner_survey$tier)
chisq.test(planner_survey$tier, planner_survey$capacity,
correct=FALSE)
fisher.test(planner_survey$tier, planner_survey$capacity, workspace =
2e8)
```

	lower	single	upper
limited	31	47	1
some	42	20	15
adequate	10	8	9

Pearson's Chi-squared test

```
data: planner_survey$tier and planner_survey$capacity
X-squared = 32.626, df = 4, p-value = 1.425e-06
```

Fisher's Exact Test for Count Data

```
data: planner_survey$tier and planner_survey$capacity
p-value = 3.357e-07
alternative hypothesis: two.sided
```

```
## Hypothesis 2 – MMAH REGION AND CAPACITY – Null hypothesis is that
“MMAH region” and “capacity” are independent
table(planner_survey$capacity, planner_survey$mmah_region)
chisq.test(planner_survey$mmah_region, planner_survey$capacity,
correct=FALSE)
fisher.test(planner_survey$mmah_region, planner_survey$capacity,
workspace = 2e8)
```

	mmah_central	mmah_east	mmah_north	mmah_west
limited	11	18	40	10
some	17	23	11	26
adequate	4	10	6	7

Pearson's Chi-squared test

```
data: planner_survey$mmah_region and planner_survey$capacity
X-squared = 28.092, df = 6, p-value = 9.028e-05
```

Fisher's Exact Test for Count Data

```
data: planner_survey$mmah_region and planner_survey$capacity
p-value = 6.196e-05
alternative hypothesis: two.sided
```

```
## Hypothesis 3 – PLAN DELIVERY AND CAPACITY – Null hypothesis is that
“Plan delivery” and “capacity” are independent
table(planner_survey$capacity, planner_survey$plan_delivery)
chisq.test(planner_survey$plan_delivery, planner_survey$capacity,
correct=FALSE)
fisher.test(planner_survey$plan_delivery, planner_survey$capacity)
```

	pd	np	ps
limited	21	23	35
some	34	7	36
adequate	10	4	13

Pearson's Chi-squared test

```
data: planner_survey$plan_delivery and planner_survey$capacity
X-squared = 12.153, df = 4, p-value = 0.01625
```

Fisher's Exact Test for Count Data

```
data: planner_survey$plan_delivery and planner_survey$capacity
p-value = 0.01601
alternative hypothesis: two.sided
```

```
## Hypothesis 4 – URBAN VS. RURAL AND CAPACITY – Null hypothesis is
that “urban vs. rural” and “capacity” are independent
table(planner_survey$capacity, planner_survey$urban_rural)
chisq.test(planner_survey$urban_rural, planner_survey$capacity,
correct=FALSE)
fisher.test(planner_survey$urban_rural, planner_survey$capacity)
```

	Rural	Urban
limited	63	16
some	47	30
adequate	15	12

Pearson's Chi-squared test

```
data: planner_survey$urban_rural and planner_survey$capacity
X-squared = 8.6824, df = 2, p-value = 0.01302
```

Fisher's Exact Test for Count Data

```
data: planner_survey$urban_rural and planner_survey$capacity
p-value = 0.01134
alternative hypothesis: two.sided
```

```
## OLR with MMAH REGION
```

```
planner_survey$mmah_region2 <- relevel(planner_survey$mmah_region, ref
= "mmah_west", "mmah_central","mmah_east", "mmah_north")
olr_mmah_regions <- polr(capacity ~ mmah_region2, data =
planner_survey, Hess=TRUE)
summary(olr_mmah_regions)
exp(coef(olr_mmah_regions))
(olr_mmah_regions_htable <- coef(summary(olr_mmah_regions)))
olr_mmah_regions_p <- pnorm(abs(olr_mmah_regions_htable[, "t value"]),
lower.tail = FALSE) * 2
(olr_mmah_regions_htable <- cbind(olr_mmah_regions_htable, "p value" =
olr_mmah_regions_p))
```

```
olr_mmah_regions_ci = confint(olr_mmah_regions)
olr_mmah_regions_ci
```

```
## Checking assumptions for OLR with MMAH REGION
brant::brant(olr_mmah_regions)
```

Call:

```
polr(formula = capacity ~ mmah_region2, data = planner_survey,
      Hess = TRUE)
```

Coefficients:

	Value	Std. Error	t value
mmah_region2mmah_central	-0.3901	0.4301	-0.9069
mmah_region2mmah_east	-0.2551	0.3857	-0.6615
mmah_region2mmah_north	-1.6909	0.4103	-4.1212

Intercepts:

	Value	Std. Error	t value
limited some	-0.9230	0.2942	-3.1371
some adequate	1.2698	0.3050	4.1630

Residual Deviance: 347.5628

AIC: 357.5628

(2 observations deleted due to missingness)

mmah_region2mmah_central	mmah_region2mmah_east
mmah_region2mmah_north	
0.6770158	0.7748046
0.1843458	

	Value	Std. Error	t value	
mmah_region2mmah_central	-0.3900607	0.4300877	-0.9069329	
mmah_region2mmah_east	-0.2551444	0.3856773	-0.6615490	
mmah_region2mmah_north	-1.6909421	0.4102994	-4.1212399	
limited some	-0.9229924	0.2942218	-3.1370630	
some adequate	1.2698112	0.3050216	4.1630203	
	Value	Std. Error	t value	p value
mmah_region2mmah_central	-0.3900607	0.4300877	-0.9069329	3.644423e-01
mmah_region2mmah_east	-0.2551444	0.3856773	-0.6615490	5.082603e-01
mmah_region2mmah_north	-1.6909421	0.4102994	-4.1212399	3.768387e-05
limited some	-0.9229924	0.2942218	-3.1370630	1.706495e-03
some adequate	1.2698112	0.3050216	4.1630203	3.140655e-05
	2.5 %	97.5 %		
mmah_region2mmah_central	-1.239016	0.4513516		
mmah_region2mmah_east	-1.015003	0.5002274		
mmah_region2mmah_north	-2.513407	-0.9004990		

Test for	X2	df	probability
Omnibus	7.83	3	0.05
mmah_region2mmah_central	0.11	1	0.75
mmah_region2mmah_east	1.83	1	0.18
mmah_region2mmah_north	6.52	1	0.01

H0: Parallel Regression Assumption holds

```
## OLR with TIER
planner_survey$tier2 <- relevel(planner_survey$tier, ref = "upper",
"lower", "single")
olr_tier <- polr(capacity ~ tier2, data = planner_survey, Hess=TRUE)
summary(olr_tier)
exp(coef(olr_tier))
(olr_tier_htable <- coef(summary(olr_tier)))
olr_tier_p <- pnorm(abs(olr_tier_htable[, "t value"]), lower.tail =
FALSE) * 2
(olr_tier_htable <- cbind(olr_tier_htable, "p value" = olr_tier_p))

olr_tier_ci = confint(olr_tier)
olr_tier_ci

## Checking assumptions for OLR with TIER
brant::brant(olr_tier)

Call:
polr(formula = capacity ~ tier2, data = planner_survey, Hess = TRUE)
```

Coefficients:

	Value	Std. Error	t value
tier2lower	-1.507	0.4376	-3.444
tier2single	-2.413	0.4670	-5.168

Intercepts:

	Value	Std. Error	t value
limited some	-1.9789	0.4111	-4.8132
some adequate	0.3462	0.3686	0.9392

Residual Deviance: 339.9768

AIC: 347.9768

(2 observations deleted due to missingness)

tier2lower tier2single

0.22155923 0.08950244

	Value	Std. Error	t value
tier2lower	-1.5070653	0.4376295	-3.4437011
tier2single	-2.4134894	0.4670334	-5.1677019
limited some	-1.9788796	0.4111375	-4.8131820
some adequate	0.3462341	0.3686499	0.9391948

	Value	Std. Error	t value	p value
tier2lower	-1.5070653	0.4376295	-3.4437011	5.738096e-04
tier2single	-2.4134894	0.4670334	-5.1677019	2.369898e-07
limited some	-1.9788796	0.4111375	-4.8131820	1.485459e-06
some adequate	0.3462341	0.3686499	0.9391948	3.476307e-01

2.5 % 97.5 %

tier2lower -2.382817 -0.6612919

tier2single -3.350544 -1.5148367

Test for	X2	df	probability
Omnibus	5.92	2	0.05
tier2lower	1.29	1	0.26
tier2single	3.83	1	0.05

H0: Parallel Regression Assumption holds

OLR with PLAN DELIVERY

```
planner_survey$plan_delivery <- relevel(planner_survey$plan_delivery,  
ref = "pd", "ps", "np")
```

```
olr_plan_delivery <- polr(capacity ~ plan_delivery, data =
```

```
planner_survey, Hess=TRUE)
```

```
summary(olr_plan_delivery)
```

```
exp(coef(olr_plan_delivery))
```

```
(olr_plan_delivery_htable <- coef(summary(olr_plan_delivery)))
```

```
olr_plan_delivery_p <- pnorm(abs(olr_plan_delivery_htable[, "t
```

```
value"])), lower.tail = FALSE) * 2
(olr_plan_delivery_htable <- cbind(olr_plan_delivery_htable, "p value"
= olr_plan_delivery_p))
```

```
olr_plan_delivery_ci = confint(olr_plan_delivery)
olr_plan_delivery_ci
```

```
## Checking assumptions for OLR with PLAN DELIVERY
brant::brant(olr_plan_delivery)
```

Call:

```
polr(formula = capacity ~ plan_delivery, data = planner_survey,
      Hess = TRUE)
```

Coefficients:

	Value	Std. Error	t value
plan_deliverynp	-1.2660	0.4364	-2.901
plan_deliveryps	-0.2696	0.3084	-0.874

Intercepts:

	Value	Std. Error	t value
limited some	-0.6222	0.2402	-2.5903
some adequate	1.4721	0.2676	5.5015

Residual Deviance: 360.2611

AIC: 368.2611

(2 observations deleted due to missingness)

plan_deliverynp	plan_deliveryps
0.2819584	0.7636933

	Value	Std. Error	t value
plan_deliverynp	-1.2659958	0.4363817	-2.9011202
plan_deliveryps	-0.2695891	0.3084484	-0.8740168
limited some	-0.6221732	0.2401954	-2.5902797
some adequate	1.4720990	0.2675804	5.5015200

	Value	Std. Error	t value	p value
plan_deliverynp	-1.2659958	0.4363817	-2.9011202	3.718312e-03
plan_deliveryps	-0.2695891	0.3084484	-0.8740168	3.821091e-01
limited some	-0.6221732	0.2401954	-2.5902797	9.589798e-03
some adequate	1.4720990	0.2675804	5.5015200	3.765309e-08

	2.5 %	97.5 %
plan_deliverynp	-2.1508203	-0.4300767
plan_deliveryps	-0.8769217	0.3343251

Test for	X2	df	probability
Omnibus	3.94	2	0.14
plan_deliverynp	3.93	1	0.05
plan_deliveryps	0.74	1	0.39

H0: Parallel Regression Assumption holds

```
## OLR with URBAN VS RURAL
planner_survey$urban_rural2 <- relevel(planner_survey$urban_rural, ref
= "Urban","Rural")
olr_UvsR <- polr(capacity ~ urban_rural2, data = planner_survey,
Hess=TRUE)
summary(olr_UvsR)
exp(coef(olr_UvsR))
(olr_UvsR_etable <- coef(summary(olr_UvsR)))
olr_UvsR_p <- pnorm(abs(olr_UvsR_etable[, "t value"]), lower.tail =
FALSE) * 2
(olr_UvsR_etable <- cbind(olr_UvsR_etable, "p value" = olr_UvsR_p))

olr_UvsR_ci = confint(olr_UvsR)
olr_UvsR_ci
```

```
## Checking assumptions for OLR with PLAN DELIVERY
brant::brant(olr_UvsR)
```

```
Call:
polr(formula = capacity ~ urban_rural2, data = planner_survey,
      Hess = TRUE)
```

Coefficients:

	Value	Std. Error	t value
urban_rural2Rural	-0.8689	0.3033	-2.864

Intercepts:

	Value	Std. Error	t value
limited some	-0.8766	0.2609	-3.3604
some adequate	1.2274	0.2722	4.5085

Residual Deviance: 361.0228

AIC: 367.0228

(2 observations deleted due to missingness)

```
urban_rural2Rural
0.4194332
```

	Value	Std. Error	t value	p value
urban_rural2Rural	-0.8688511	0.3033468	-2.864217	4.180413e-03
limited some	-0.8766218	0.2608660	-3.360429	7.782143e-04
some adequate	1.2274446	0.2722484	4.508547	6.527308e-06

2.5 % 97.5 %

-1.470174 -0.278560

Test for	X2	df	probability
Omnibus	0.55	1	0.46
urban_rural2Rural	0.55	1	0.46

H0: Parallel Regression Assumption holds