

LOCAL AGRI-FOOD SYSTEMS AS A MUNICIPAL PRIORITY: CONSIDERING THE ROLE, APPROACH AND CAPACITY OF MUNICIPAL PLANNING DEPARTMENTS

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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 (MNDMNRF) 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



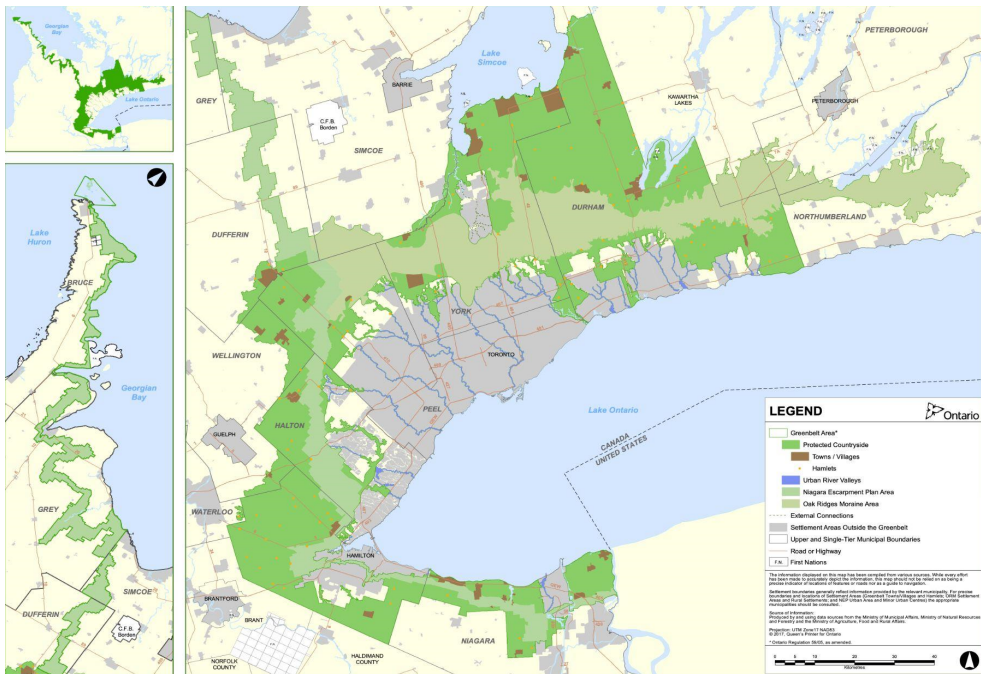


Figure 1: Map delineating the Greenbelt area [39].

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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REFERENCES

- [1] Pothukuchi, K. & Kaufman, J.L., Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. *Agriculture and Human Values*, **16**(2), pp. 213–224, 1999.
- [2] Pothukuchi, K. & Kaufman, J.L., The food system: A stranger to the planning field. *Journal of the American Planning Association*, **66**(2), pp. 113–124, 2000.
- [3] Thibert, J., Making local planning work for urban agriculture in the North American context: A view from the ground. *Journal of Planning Education and Research*, **32**(3), pp. 349–357, 2012.
- [4] Donald, B., Food systems planning and sustainable cities and regions: The role of the firm in sustainable food capitalism. *Regional Studies*, **42**(9), pp. 1251–1262, 2008.
- [5] Campbell, M.C., Building a common table: The role for planning in community food systems. *Journal of Planning Education and Research*, **23**(4), pp. 341–355, 2004.
- [6] Morgan, K., Feeding the city: The challenge of urban food planning. *International Planning Studies*, **14**(4), pp. 341–348, 2009.
- [7] Morgan, K., The rise of urban food planning. *International Planning Studies*, **18**(1), pp. 1–4, 2013.
- [8] Music, J., Finch, E., Gone, P., Toze, S., Charlebois, S. & Mullins, L., Pandemic victory gardens: Potential for local land use policies. *Land Use Policy*, **109**, 2021.
- [9] Reynolds, B., Feeding a world city: The London food strategy. *International Planning Studies*, **14**(4), pp. 417–424, 2009.
- [10] Sonnino, R., Feeding the city: Towards a new research and planning agenda. *International Planning Studies*, **14**(4), pp. 425–435, 2009.
- [11] Blay-Palmer, A., The Canadian pioneer: The genesis of urban food policy in Toronto. *International Planning Studies*, **14**(4), pp. 401–416, 2009.
- [12] Wegener, J., Raine, K. & Hanning, R., Insights into the Government’s role in food system policy making: Improving access to healthy, local food alongside other priorities. *International Journal of Environmental Research and Public Health*, **9**(11), pp. 4103–4121, 2012.



- [13] Caldwell, W., Hiltz, S. & Wilton, B., *Farmland Preservation: Land for Future Generations*, 2nd ed., University of Manitoba Press, 2017.
- [14] Macdonald, S., Monstadt, J. & Friendly, A., Towards smart regional growth: Institutional complexities and the regional governance of Southern Ontario's Greenbelt. *Territory, Politics, Governance*, pp. 1–21, 2021.
- [15] Marr, E.J., Howley, P. & Burns, C., Sparing or sharing? Differing approaches to managing agricultural and environmental spaces in England and Ontario. *Journal of Rural Studies*, **48**, pp. 77–91, 2016.
- [16] Pond, D., Ontario's Greenbelt: Growth management, farmland protection, and regime change in Southern Ontario. *Canadian Public Policy*, **35**(4), pp. 413–432, 2009.
- [17] Wegener, J., Seasons, M. & Raine, K.D., Shifting from vision to reality: Perspectives on regional food policies and food system planning barriers at the local level. *Canadian Journal of Urban Research*, **22**(1), pp. 93–112, 2013.
- [18] Association of Municipalities Ontario (AMO), Ontario municipalities. <https://www.amo.on.ca/about-us/municipal-101/ontario-municipalities>. Accessed on: 10 Dec. 2021.
- [19] Raja, S., Born, B.M. & Russell, J.K., A planners guide to community and regional food planning: Transforming food environments, facilitating healthy eating. *American Planning Association*, 2008.
- [20] Buchan, R., Cloutier, D., Friedman, A. & Ostry, A., Local food system planning: The problem, conceptual issues, and policy tools for local government planners. *Canadian Journal of Urban Research*, **24**(1), pp. 1–23, 2015.
- [21] Gough, D., Oliver, S. & Thomas, J., *An Introduction to Systematic Reviews*, SAGE, 2012.
- [22] Hayhurst, R.D., Dietrich-O'Connor, F., Hazen, S. & Landman, K., Community-based research for food system policy development in the City of Guelph, Ontario. *Local Environment*, **18**(5), pp. 606–619, 2013.
- [23] Caldwell, W., Geschiere, E., Sousa, E. & Zink, R., Municipal capacity: A case study of Ontario's greenbelt to respond to emerging agriculture and agri-food priorities. *International Journal of Environmental Impacts*, **4**(3), pp. 243–261, 2021.
- [24] Desjardins, E., Lubczynski, J. & Xuereb, M., Incorporating policies for a healthy food system into land use planning: The case of Waterloo Region, Canada. *Journal of Agriculture, Food Systems and Community Development*, **2**(1), pp. 127–139, 2011.
- [25] Huang, D. & Drescher, M., Urban crops and livestock: The experiences, challenges, and opportunities of planning for urban agriculture in two Canadian provinces. *Land Use Policy*, **43**, pp. 1–14, 2015.
- [26] Akimowicz, M., Képhaliacos, C., Landman, K. & Cummings, H., Planning for the future? The emergence of shared visions for agriculture in the urban-influenced Ontario's Greenbelt, Canada, and Toulouse InterSCoT, France. *Regional Environmental Change*, **20**(2), 2020.
- [27] Bennett, E., Emancipatory responses to oppression: The template of land-use planning and the Old Order Amish of Ontario. *American Journal of Community Psychology*, **31**(1–2), pp. 157–171, 2003.
- [28] Port, C.M. & Moos, M., Growing food in the suburbs: Estimating the land potential for sub-urban agriculture in Waterloo, Ontario. *Planning Practice and Research*, **29**(2), pp. 152–170, 2014.



- [29] Waldick, R., Bizikova, L., White, D. & Lindsay, K., An integrated decision-support process for adaptation planning: Climate change as impetus for scenario planning in an agricultural region of Canada. *Regional Environmental Change*, **17**(1), pp. 187–200, 2016.
- [30] Van Osch, K., An assessment of farm plans and countryside planning in Ontario. *Environments*, **25**, pp. 15–28, 1997.
- [31] Irvine, S., Johnson, L. & Peters, K. Community gardens and sustainable land use planning: A case study of the Alex Wilson Community Garden. *Local Environment*, **4**(1), 1999.
- [32] Wegener, J., Hanning, R.M. & Raine, K.D., Generating change: Multisectoral perspectives of key facilitators and barriers to food system policy making. *Journal of Hunger and Environmental Nutrition*, **7**(2–3), pp. 137–148, 2012.
- [33] Wekerle, G.R., Food justice movements: Policy, planning, and networks. *Journal of Planning Education and Research*, **23**(4), pp. 378–386, 2004.
- [34] Caldwell, W., Land-use planning, the environment, and siting intensive livestock facilities in the 21st century. *Journal of Soil and Water Conservation*, **53**(2), pp. 102–106, 1998.
- [35] Ontario Professional Planners Institute (OPPI), Healthy communities and planning for food, planning for food systems in Ontario: A call to action from the Ontario Professional Planners Institute. https://ontarioplanners.ca/OPPIAssets/Documents/Calls-to-Action/oppi_media_release_june_24_2011.pdf.
- [36] Hoffman, D., Soils, agriculture and sustainable development: Nationally, provincially, locally. *Environments*, **24**(1), pp. 123–128, 1996.
- [37] Buchan, R., Cloutier, D.S. & Friedman, A., Transformative incrementalism: Planning for transformative change in local food systems. *Progress in Planning*, **134**, 2019.
- [38] Connell, D., Bryant, C., Caldwell, W., Churchyard, A., Cameron, G., Johnston, T., Margulis, M., Ramsey, D. & Marois, C., Food sovereignty and agricultural land use planning: The need to integrate public priorities across jurisdictions. *Journal of Agriculture, Food Systems, and Community Development*, **3**(4), pp. 1–8, 2013.
- [39] Ministry of Municipal Affairs and Housing, Schedule 1: Greenbelt area. <https://files.ontario.ca/on-2019/mmah-greenbeltmaps-en-1-schedule-1-greenbelt-area.pdf>.