

# **Planning for Urban Agriculture in Canadian Cities**

by

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## **AUTHOR'S DECLARATION**

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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## Abstract

As issues regarding food security have become more prevalent in the developed world, the popularity of methods to combat these issues, such as urban agriculture (UA), have risen. As a result, municipal decision-makers and planners have started to make food and urban agriculture a priority. This thesis contributes to that end by exploring how planning tools, policies and regulations have an effect on urban agriculture in Canada.

An inventory of urban agriculture activities was created for large and mid-sized cities across Canada to determine the prevalence and location of activity types. Ten cities with the highest and most varied types of UA were chosen for more in-depth case study exploration. A policy scan and semi-structured interviews with planners were conducted for each of the case study municipalities to determine if planning had contributed to the success of UA in their community. The results of the inventory revealed fourteen different types of urban agriculture present across Canada, with community gardens being the most popular. In terms of geographic distribution, the majority of UA activity is concentrated on the east and west coasts. Large cities tend to have not only a wider variety of UA, but also more urban agriculture per capita than mid-sized cities. Of the planning tools examined, case study results indicate that zoning and by-laws have the biggest impact on UA. Although many of the case study cities incorporate food or UA in their municipal plans, these were generally not seen as having much of an effect. Factors outside of planning such as local food history and context, a “green ethic”, interest in getting back to the land, and the support of key individuals were shown to have a larger influence on the prevalence of UA.

Recommendations for planners that want to have a greater influence on UA include ensuring that zoning and by-laws are permissive; incorporating food and UA into official plans; monitoring indicators related to UA; having public engagement strategies that are specifically targeted to issues of food and urban agriculture; and cultivating a close relationship with the local food policy council.

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## Chapter 1: Introduction

In recent years, as a response to the increasingly global and industrial food system, food and where it comes from has become a salient issue in the developed world. One way that this has manifested itself is through the rise in popularity of urban agriculture (UA). The establishment of green roofs, community gardens and the raising of urban chickens are just some of the projects that have been undertaken to promote local food production within urban areas. The enthusiasm in North America regarding the local food movement has led municipalities and their planners to begin taking steps towards making urban agriculture a priority. The aim of this study is to contribute to this effort by exploring how planning tools, policies and regulations have an influence on urban agriculture in Canada.

First, there are some definitions that need clarification in order to understand the concepts in this research. The first term is the “food system,” which can be defined as “the chain of activities connecting food production, processing, distribution, consumption, and waste management, as well as all the associated regulatory institutions and activities” (Pothukuchi & Kaufman, 2000, p.113). It is important to understand this term, as urban agriculture can fall under several of the different areas within the food system.

Urban agriculture itself is a term that needs to be defined, yet this has proved to be a difficult task. Soonya Quon (1999) provides a list of twenty-two different descriptions that have been used by various scholars and organizations to define UA. The main points of dissent among the definitions include which stages of production are encompassed



by the term UA (purely growth and harvesting, or processing and distribution as well), the types of activities (food vs. non-food) and the legality of the operation (Quon, 1999). Based on consideration of existing definitions and the goal of this research, urban agriculture in this study consists of activities that grow food or raise livestock within an urban area, and of which the products are destined to be distributed and consumed locally.

### **1.1 Context for UA in North America**

Urban planning has not traditionally been associated with the food system, and the reasons behind this have been explored and documented in a groundbreaking survey by Pothukuchi and Kaufman (2000). They found that the main reason, among others, is that in the past planners did not feel that food issues fell under their purview (Pothukuchi and Kaufman, 2000). This trend, however, has begun to change, as evidenced by the commitment of various planning associations (Ontario Professional Planners Institute, American Planning Association) to planning for food systems, and by increased interest in food issues by planners themselves (Caldwell, 2010). Morgan and Sonnino (2010) have put forth a concept known as the New Food Equation (NFE) that outlines reasons as to why food has become more visible in the global North, and consequently why planners should be concerned with the food system. Other issues that provide justification for planners' involvement in the food system include climate change, population growth, loss of productive farmland, the contribution of the food system to a healthy community, and peak oil. Helping to facilitate urban agriculture is just one of the ways in which planners can become involved in the food system.

## 1.2 Review of Research

Prior research into ways that planners influence urban agriculture in North America suggests that there are still gaps in the literature that need to be addressed in order to gain a fuller understanding of the subject (Mendes, *et al*, 2008; Lovell, 2010; Tornaghi, 2012). In brief, there is a significant lack of research on UA in a Canadian context. With the exception of Vancouver and Toronto there has not been a significant amount of work done examining small, mid-sized, and other large cities. It is also necessary to look more closely at specific tools that planners can use to facilitate urban agriculture. Finally, there is a need to assess the success of the measures that have been put in place; once policies to enable UA have been incorporated into planning agendas, are there any noticeable impacts on UA in the community? This gap in our understanding likely exists because many of the UA initiatives in Canada, and North America in general, are fairly new, and resources may not yet be allocated to support this type of research. Moving forward, however, it will be necessary to take a critical look at these strategies and determine what has been successful, and how other programs can be improved.

This research addresses several of these literature gaps. Primarily, it brings the research on UA into a Canadian context by exploring the current state of the urban agricultural spectrum across Canada in both large and mid-sized cities. Second, specific planning tools such as zoning by-laws, official plans, food policy, etc. are examined to determine their potential impacts on UA. Third, after evaluating the impact of these tools on UA, recommendations are made that can be used by other communities interested in making urban agriculture a priority.

### **1.3 Primary and Secondary Research Questions**

After reviewing the pertinent scholarly literature and determining what gaps exist, the purpose of this study is to explore how planning can have an effect on urban agriculture in Canada. The research addresses the question:  
How do planning tools, policies, and regulations influence urban agriculture in Canadian cities?

Sub-questions include:

- What evidence of UA can be found in Canada?
  - What types of UA are being practiced?
  - Where are they present?
- What planning tools are being used to influence UA?
  - What impacts do the aforementioned planning tools have on UA?
- What are the other factors that have an effect on UA?
  - What level of impact do they have as compared to planning tools?

### **1.4 Methods**

In order to effectively answer the research questions, the study is divided into both a quantitative and a qualitative phase. A sequential mixed-methods approach is used, in that the study begins with a quantitative method, followed by a qualitative method to expand on the results of the first (Creswell, 2009).

The quantitative phase involves the creation of an inventory of UA activities in order to determine which types of urban agriculture are being practiced in Canada and how abundant they are. A sampling of cities from across Canada are chosen and stratified by size (large and mid-sized) and by province, in order to give an accurate snapshot of the

state of UA across the country. Mainly internet-based research is used to create an inventory of which urban agricultural activities are present in the chosen municipalities.

The second phase of the study is a qualitative assessment, beginning with a policy scan and moving on to semi-structured interviews. Based on the results of the initial inventory, a selection of cities that are deemed to have successful UA are chosen and a policy scan is conducted with the purpose of discovering what planning tools that affect UA are in place. Based on the themes that emerge from the inventory and policy scan, in-depth, semi-structured interviews with planners are conducted in order to take a closer look at the impact that these tools have had on UA. Purposive/targeted sampling is used to select participants that can provide the most valuable information (Patton, 2002).

### **1.5 Importance of this Study**

As mentioned earlier, there has been an urban agriculture renaissance taking place in North America. There is, however, only a small but growing body of research that has been exploring this phenomenon in a Canadian context. Because urban planning has not typically been associated with matters related to food, there is a lack of understanding as to how the planning profession and its tools can most effectively influence UA. This study not only serves to shed light on the UA situation in Canada but provides recommendations as to how planners can successfully facilitate urban agricultural activities in their communities.

### **1.6 Thesis Organization**

Chapter 2 of this thesis consists of a review of the existing literature as it pertains to how planners can influence urban agriculture in a North American context. Gaps in the current body of work, as well as opportunities for further research, are also provided in

this section. Chapter 3 gives an in-depth description of the research methodologies used to carry out this study. In Chapter 4, the results of the data obtained from the inventory, policy review and interviews are provided, followed by a discussion and critical analysis of the findings. Lastly, Chapter 5 offers some conclusions and recommendations for municipalities that are interested in creating and sustaining successful urban agriculture agendas.

## **Chapter 2: Literature Review**

The literature review will look at UA through a planning context as it exists in North America (excluding Mexico). The purpose will be to explore the current understanding about the relationship between urban agriculture and urban planning. It is important to note that UA is just one aspect of the urban food system; as such, this section will begin by looking at how planning has responded to food system issues in general. That will be followed by an investigation of UA in the North American context, and finally a review of the existing literature, primarily consisting of books, reports and academic journal articles will be undertaken. A focus will be to ascertain the gaps in understanding, culminating in the identification of further research needs.

### **2.1 Planners and the Food System**

Planners' interest in the food system is a fairly recent development. In the late 1990s, a groundbreaking study by Pothukuchi and Kaufman (2000) surveyed twenty-two planning agencies in the United States to determine why there had been a lack of planning involvement in food systems to date, and their results indicated that there were seven main reasons for this phenomenon. The first is the belief that the food system only indirectly affects the built environment, and therefore does not fall under the purview of planners. Second is the opinion that the food system is a rural, rather than an urban issue. Factors such as technological advancements in the food transportation, processing and preservation industries; the process of urbanization in the United States; the separation of public policy into rural and urban; and the fact that access to food is taken for granted by many city residents have all contributed to the belief that food is solely a rural issue (Pothukuchi & Kaufman, 1999; Mougeot, 2006). Third, the survey made clear that

planners believe since they are concerned with public goods and services, the private market aspect of the food system makes it a private sector issue. Fourth, the interviewees stated that planning agencies are not funded to do food system planning.

According to Hodge and Gordon (2008), one of the two primary reasons to engage in urban planning is the community's wish to "solve some problems associated with its development" (p.5); however the Pothukuchi and Kaufman survey found that the fifth reason for neglecting the food system is that most planners believed that there was no actual issue that needed to be addressed. Sixth, it was not clear to planners who they should be collaborating with in order to address food system issues. Due to the lack of a central food department or agency in many local governments, it is difficult to ascertain who would make the best connection in order to have a significant involvement in the food system. Lastly, the seventh reason for the lack of interest in the food system was that planners did not feel they knew enough about the subject matter to make a meaningful contribution.

It is possible to see the evolution of attitudes with regard to planning and food systems since the original Pothukuchi and Kaufman (2000) survey. One of the main reasons for this is what is known as the New Food Equation (NFE), a concept put forth by Kevin Morgan and Roberta Sonnino in 2010. The key idea of the NFE is the "high-level political acceptance, by national and international governing bodies, of the *multifunctional* character of the agri-food system" (Morgan and Sonnino, 2010, p.210). They outline five trends that have contributed to the increased visibility of food in the global north: the food price surge in 2007-2008; a worldwide increase in food insecurity; the fact that food security has been made a matter of national security; the effects of

climate change on the industrial food system; and the increasing prevalence of land conflicts. Based on these recent trends, cities can be seen at the forefront of the NFE due to the large percentage of the global population that lives in urban areas, their roles as centres of political protest, and the fact that cities have contributed to rising obesity rates through provision of energy-dense foods and designs which do not foster physical activity (Morgan and Sonnino, 2010).

With the increasing visibility of the food system due to the NFE, the general public has become more interested in food issues, making it a priority for local political leaders (Morgan, 2009). Additionally, the multifunctionality of the food system means that it can have an effect on a large collection of other sectors, many of which are considered to be of legitimate interest to planners (Morgan, 2009). It follows from there that if the food system intersects with other planning issues, and cities have a large role to play in the NFE, then food system issues should be a priority for local governments and planning departments.

Increasing interest in the food system by planners has been documented; the Pothukuchi and Kaufman survey discussed earlier also asked planners whether or not they thought planners should become more involved in the food system; 38% responded “yes,” 38% also responded “it depends,” and 25% responded “no” (2000). A more recent survey of Ontario planners conducted by Wayne Caldwell (2010) indicates that planners today think their profession should have a significant role in community and regional food system issues. The study also revealed that there is a desire for more involvement in urban agriculture projects and community gardens (Caldwell, 2010).



Two concrete manifestations of this increased interest in the food system are the “Policy Guide on Community and Regional Food Planning”, published by the American Planning Association (APA) in 2007, and the document “Planning for Food Systems in Ontario: A Call to Action,” authored by the Ontario Professional Planners Institute (OPPI) in 2011. The APA Policy guide has outlined findings that illustrate the effects of the food system on local and regional areas, as well as its links to the economy, health, ecological systems, social equity, native/ethnic food cultures, and state and federal food policies, and uses these as a justification for its own general and specific policies. The guide offers two overarching goals to planners:

1. Help build stronger, sustainable, and more self-reliant community and regional food systems, and,
2. Suggest ways the industrial food system may interact with communities and regions to enhance benefits such as economic vitality, public health, ecological sustainability, social equity, and cultural diversity (American Planning Association, 2007, p.2).

The OPPI Call to Action urges “planners, citizens and all stakeholders to make healthy community planning, and in particular planning for healthy food systems, a priority” (Ontario Professional Planners Institute, 2011, p. 6). OPPI recognizes that many areas of the food system intersect with planning issues and aspects of regional and local economic development, and their commitment to fostering healthy communities means that planning for food systems must become a priority.

Although food and agriculture are becoming recognized areas of planning and design, it does not necessarily mean that they have been integrated into planning practice (Nasr & Komisar, 2012). Even with the popularity and salience of food issues in the general public and the planning profession, it will take a gradual transition before they are

incorporated into the everyday work of planners (Nasr & Komisar, 2012). We can see this starting to happen with the emergence of food system jobs, independent of and within the planning practice, and the incorporation of food system planning into the job descriptions at many planning departments (Nasr & Komisar, 2012).

## **2.2 Urban Agriculture in North America**

The majority of this section looks at urban agriculture (UA) as a specific element of the urban food system. A commonly cited definition of urban agriculture is:

UA is an industry located within (intraurban) or on the fringe (periurban) of a town, city, or metropolis, which grows or raises, processes and distributes a diversity of food and non-food products, (re-)using largely human and material resources, products and services found in and around the urban area, and in turn supplying human and material resources, products and services to that urban area (Mougeot, 2000, p.10).

Mougeot (2000) proposes the idea that UA must be an industry, and this entrepreneurial aspect is included in other UA definitions as well (for example, Smit, Ratta, & Nasr, 1996). It can be argued that community and other types of gardens do not necessarily fall under this definition (Wiskerke & van der Schans, 2012), but for the purpose of this paper they will be included, as community gardens are one of the most common ways of incorporating urban agricultural activities into the urban landscape. Other activities encompassed by the definition can include food-producing green roofs, animal rearing, Continuous Productive Urban Landscapes (CPULs), aquaculture, farmers markets, small-scale farming, vertical farms and urban beekeeping, among others.

UA is not a new concept; Ebenezer Howard's conception of the Garden City included elements of agriculture within the city and on the fringe in order to create a sustainable environment, and relief and victory gardens served a food security function

during the World Wars and the Great Depression (Mukherji & Morales, 2010). It has, however, experienced a resurgence in recent years due to increasing food security and sustainability concerns around the world. One can look at the rapid rise of urban agriculture in places like Detroit, Portland, OR, and Vancouver as evidence of the current enthusiasm for UA.

Research regarding UA in a food security context has been mainly centred on the developing world. The RUAF Foundation is a resource centre for food security and urban agriculture, and sees UA as a way to alleviate poverty, generate employment and stimulate participatory governance in cities in the developing world (RUAF Foundation, n.d.). Additionally, the International Development Research Centre (IDRC) published a series of reports known as *Cities Feeding People* which looks at urban agriculture and food security in East Africa (Egziabher, *et al*, 1994).

In North America, the rise in popularity of UA can partly be attributed to food security concerns as well. Local and regional food systems are starting to present themselves as potential solutions to the negative consequences of the globalized industrial food system (Kremer & DeLiberty, 2011). Research regarding the existence of food deserts (areas characterized by poor access to affordable, healthy and culturally appropriate food) in the United States and Canada has shown that food deserts do indeed exist in North America and are increasingly becoming an issue (Beaulac, Kristjansson & Cummins, 2009; Larson & Gilliland, 2008; Smoyer-Tomic, Spence & Amrhein, 2010; Hendrickson, Smith & Eikenberry, 2006). UA can be viewed as a potential solution to solving problems of food security in these areas, although some believe it is not a solution to large-scale food insecurity (Thibert, 2012).

Even if this is the case and UA does not have the capacity to solve problems of food security in North America in an impactful way, it could potentially play a role in changing people's relationship to food and to place (Thibert, 2012). Interviews conducted by Joel Thibert indicate that one of the most important aspects of UA is its ability to educate people about food and the food system. In addition to education, different urban farmer typologies, such as community gardens, can play a capacity-building role by providing work training and community safety (Thibert, 2012). Often the long-term effects of community gardening have to do with social interaction, as opposed to simply growing food (Johnson, 2011). Viewing urban agriculture as a means of engaging people as citizens and transforming the city indicates its relevance to the planning field (Thibert, 2012).

In addition to food security, sustainability has become a major priority for planning agencies and governments. Evidence has shown that UA can help to create a sustainable environment when it is incorporated into the urban landscape, and thus has started to integrate into the agendas of these actors (Deelstra & Girardet, 2000). The preoccupation with impending global crises such as peak oil, climate change, and massive population growth have exposed the inefficiencies and unsustainability of the industrial agri-food system. As a response, in recent years we have seen a rise in the popularity of local, organic food movements, and urban agriculture has a large role to play in supporting those ideals.

## **2.3 Urban Agriculture and Planning**

### **2.3.1 Constraints**

Historically, there have been many constraints placed upon urban agriculture by planning traditions and the lack of policy tools that are able to effectively deal with UA

(Cohen, 2012; Tornaghi, 2012; Quon, 1999; Thibert, 2012). Tornaghi (2012) argues that top-down planning traditions based on functionalism and efficiency have not been receptive to the needs of new urban cultures, nor have they been able to create adaptable public spaces. The development of participatory planning in the last few decades (in which UA's ability to engage citizens in transforming urban space plays a role) has helped to open up the system to allow planners to play a larger role in facilitating UA (Tornaghi, 2012).

Land-use issues are another major impediment to the proliferation of urban agriculture in North American cities. One of the main land-use factors is that of insecure land tenure. Although there is usually less uncertainty regarding land tenure in the global North than in the developing world, urban farming operations are often located on leased or borrowed land (Thibert, 2012). These leases are often short-term and serve to deter long-term investments in land and weaken the UA goal of sustainability (Mogk, Kwiatkowski, & Weindorf, 2010). Planning tools such as land-use designations and zoning can also serve as a constraint to urban agriculture. Lacroix (2010) argues that down-zoning specific areas or zoning of agricultural districts to encourage UA are likely to be legally challenged; she asserts that these actions should only be taken if the areas are viable for commercial uses of UA, and if they fit into a comprehensive plan. Limited availability of land in cities and the resulting competition for it means that it is often difficult for urban farmers to secure access to land that is appropriate for urban agricultural uses (Lovell, 2010). There is sometimes a debate over the benefits of land designated to UA activities versus public open space, where the space can be enjoyed by

everyone, instead of benefiting a small number of individuals (Hou, Johnson & Lawson, 2009).

Urban agriculture as an object of planning has not yet been widely accepted within planning institutions, and is consequently not widespread in planning education, practice, or research (Thibert, 2012). Although this is rapidly changing, the role of the planner in relation to UA is still not clearly defined, and the integration of UA into common planning practice has a long way to go.

### **2.3.2 Opportunities**

By using Kingdon's (2002) policy streams framework to analyze the relationship between urban agriculture and urban planning, Dr. Nevin Cohen has determined that there is presently a policy window for urban agriculture in North America (2012). The first stream in Kingdon's model is problem recognition; the recent interest in UA is indicative of a broader concern on the part of policymakers regarding vulnerabilities of cities to the industrial food system and the New Food Equation (Cohen, 2012). The second stream, policy formation, is evidenced through the creation of the food planning policy guide by the APA, as well as the growth of national networks such as the Community Food Security Coalition (Cohen, 2012). The political stream involves swings in public opinion such as promoting urban agriculture as a reaction to globalization and the industrial food system, as well as shifts in ideology, which can be seen in the neo-liberal shift in planning which views urban agriculture as an entrepreneurial activity (Cohen, 2012). The confluence of these three streams indicates that a policy window has opened for UA, in which urban agricultural policies can be implemented. Cohen (2012), however, cautions that a shift in any one of the streams could cause the opportunity for UA to close.

### **2.3.3 How can planning influence urban agriculture?**

One of the ways to facilitate successful implementation of urban agriculture by planners is through directing focus to stakeholders. Because of the paradigm shift in the planning profession to a bottom-up approach that acknowledges the importance of participatory planning processes, integration of UA will involve the input of various stakeholders. The interests of all of these stakeholders, however, are not always taken into consideration (Halloran, 2011). Campbell (2004) provides a detailed stakeholder analysis of key players in the global industrialized and alternative food systems in order to elaborate on some of the tensions and complementarities between them. Planners should undertake their own analyses in order to fully identify and understand the contexts which they are planning for (Campbell, 2004). In order to have a successful participatory planning process, it is necessary to involve all stakeholders, take their needs and priorities into account, and to define the interactions between them (Halloran, 2011). Having a thorough knowledge of all participants by performing an analysis will make it simpler to employ multi-stakeholder processes in the development of UA. Halloran points to the Vancouver Food Policy Council (VFPC) as an extremely successful example of using the multi-stakeholder process to its full potential; the VFPC has been a significant presence in the creation and governance of community gardens around the city.

Food policy councils (FPCs) have been seen by some scholars as a significant way in which planners can become involved not only in UA but in food policy in general (Campbell, 2004; Halloran, 2011; Pothukuchi & Kaufman, 1999; Morgan, 2009; Cohen, 2012). An FPC generally consists of a variety of members who represent different areas of the food system community, along with government officials, and their responsibility

is to monitor the city's food system and deal with existing and future problems (Pothukuchi & Kaufman, 1999). FPCs usually exist outside the frame of government, a notable exception being the Toronto Food Policy Council (TFPC), which is an independent sub-committee of the Board of Health. Portland, OR also exhibits an example of a 'strong' FPC in that its aim is to create policy and advise the government as to best implementation practices (Mukherji & Morales, 2010).

Examples of actions that have been taken on by FPCs include community education, research and analysis and policy advocacy (Pothukuchi & Kaufman, 1999). Because planners serve as an intermediary between government, politics and the community, they are ideal candidates to have a large role in FPCs (Halloran, 2011). There has been a proliferation of FPCs across the United States and Canada, and these bodies can be looked to as examples of successful integration of urban planning, the food system and UA. Cohen (2012) provides case studies of Detroit, San Francisco, Chicago, Seattle and New York to illustrate successful urban agricultural policy development, and mentions that in each case, a variety of stakeholders have worked together on councils to create these policies. Campbell (2004) asserts that planners should help to facilitate the development of local FPCs as a way of playing a more active role in the food system; they can be used to weave food policy into new or existing urban plans (Morgan, 2009).

Although land-use issues are cited earlier as one of the barriers to urban agriculture, zoning and city ordinances are also some of the most effective tools for facilitating UA. Lovell (2010) states that urban agricultural uses have not been considered as important as other open green spaces in the past, and as such have not been protected by zoning; planners could enable UA through designing spaces such as community



gardens that are protected by appropriate zoning. The APA publishes zoning practice documents, and in 2010 it released one specifically on zoning for urban agriculture. This document illustrates three ways in which cities usually try to foster urban agriculture: through dealing with UA as a component of land-use and food policy and incorporating it into planning processes; creating or funding community garden organizations; and creating zoning that is friendly to UA (Mukherji and Morales, 2010). The authors see zoning as a typically restrictive mechanism, and assert that planners can play a role by redesigning ordinances related to UA. In the United States, UA can be treated either as a zoning district or a use category. The former type of zoning regulation allows for a wide variety of agricultural activities in a designated agricultural area. The latter categorizes UA as a “use or set of uses that is allowed, conditional or forbidden, depending on the district” (Mukherji & Morales, 2010, p. 4).

A framework for categorizing UA is proposed by the authors based on the dispersal and intensity of urban agricultural uses in certain areas. They contend that the existence of a permissive district allows for widespread, intensive forms of agriculture (rural or periurban farming), whereas an agricultural use category is more useful for facilitating specific, intensive UA activities such as large urban markets or farming initiatives and non-industrial food processing operations, as well as addressing land tenure issues. With regard to less intensive forms of agriculture, it is possible for cities to encourage widespread UA activities by creating large permissive districts; specific ordinances that can be revised to include ones that limit the height of vegetation or limit the keeping of small numbers of livestock in urban areas (Mukherji and Morales, 2010).

Masson-Minnock and Stockmann (2010) conducted a case study in Flint, Michigan to determine the barriers of the legal system to constructing a hoop house<sup>1</sup> in the city. They found that there were many policy constraints that made it difficult to implement urban agricultural activities. These included rigid requirements and processes for a site plan review, zoning ordinances that prohibited the keeping of farm animals in commercial and residential zones, as well as city ordinances that affected elements such as trash pickup, municipal water use and parking standards. In order to determine how planning could be used to ameliorate these problems, an agency was hired to help the city planning commission update the ordinances by identifying the challenges to UA, researching policies in other cities and mobilizing public participation.

As a result of this process, the city agreed to change site review requirements so as to make the approval process more streamlined and change zoning bylaws to allow for the raising of small numbers of chickens. They did not, however change allowed uses dealing with agriculture due to the Michigan Right to Farm Act. It was determined that more public participation as well as mapping was needed to determine the place of UA in Flint. This case illustrates the potential for a meaningful relationship between planners and UA, and their ability to change current planning practices to facilitate urban agricultural activities.

In addition to zoning, urban design can be used to enable UA activities within a city. One design concept that could be implemented by planners is called the Continuous Productive Urban Landscape (CPUL). This concept advocates using open urban space to create a series of interlinked productive landscapes for growing food throughout the city

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<sup>1</sup> Also known as polytunnels or high tunnels, hoophouses are unheated greenhouses, normally covered in polyethylene, that can help to extend the growing season for plants (*What is a high tunnel?*, n.d.)

(Viljoen and Bohn, 2009). Current urban landscapes could be retrofitted to provide for this type of activity, and planners could incorporate these design elements into future city plans as well. “Carrot City” is an initiative that explores creative designs (actual and conceptual) for integrating UA into the urban landscape. Case studies from North America and around the world are examined, and concepts include everything from vertical farms and CPULs to backyard gardening. There are countless ways in which urban design can be used to facilitate UA, and it is up to urban planners to decide how these strategies can be incorporated into the city.

Deciding what land can or cannot be used for urban agricultural activities is a role that planners can effectively take on. Public and institutional green spaces are an opportunity to include UA as part of the green infrastructure of a city; many communities have public green space that could be converted to community gardens or other UA uses (Lovell, 2010). Private land can be used for entrepreneurial farms or backyard gardening, and the retrofitting of built structures to incorporate green roofs and other infrastructure necessary for food production is also an opportunity for UA (Lovell, 2010). Land inventories are a tool that can be utilized by planners to determine the best possible spaces to use for urban agriculture. Masson-Minnock and Stockmann (2010) indicated the need for better mapping after conducting a case study in Flint, Michigan, Halloran (2011) sees urban land databases as an opportunity for stronger link between UA and planning, and Mendes, *et al* (2008) looked at the use of land inventories to plan for UA in both Portland, OR and Vancouver.

Mendes *et al* (2008) assessed whether or not land inventories were able to promote integration of UA into planning and policymaking processes and increase

awareness of social sustainability issues. As the authors outline, The Diggable City Project was conducted in Portland to inventory all city-managed lands and determine which areas would be suitable for establishing community gardens and other forms of urban agriculture. Council had indicated their belief in the importance of UA to the city for health and sustainability reasons, and graduate students from the University of Portland were recruited to carry out the study using GIS technology. The number of UA projects that have actually been built as a result of the land inventory is small, however there is still interest among policymakers and community members, and thus the project was deemed a success.

The purpose of the Vancouver land inventory was to support land-use decision-making, increase public awareness, support the commitment to sustainability, and formulate a citywide UA strategy (Mendes, *et al*, 2008). The authors conclude that the project did help to develop a green building strategy and contribute to the sustainability agenda, but because the scope of this project was smaller than the one in Portland, it did not do as much to facilitate social awareness of sustainability. Both of these case studies illustrate the potential for tools such as land inventories to help planners determine the best places to implement forms of UA, and can be used to strengthen the relationship between urban agriculture and urban planning.

In addition to what practicing planners can do to facilitate urban agriculture, there is a role for academics to play in fostering the relationship between planning and UA. Academics in the planning field can continue to do research and publish in scholarly journals, include the food system in survey courses at universities and offer specialized food systems courses (Campbell, 2004). Planners must be more educated about food

issues to effectively plan for urban agriculture, and this starts the university level (Halloran, 2011). Additionally, academics can participate in local food system projects in order to increase their understanding of the issues (Campbell, 2004).

## **2.4 Research Opportunities**

After reviewing pertinent scholarly literature regarding the relationship between urban agriculture and planning in North America, it is evident that there are still gaps in the research that need to be addressed in order to gain a fuller understanding of the subject. The first issue that is immediately clear is the dearth of literature on UA and planning in Canada. Much of the research has been done on cities in the United States with progressive urban agriculture agendas like Detroit, Seattle, New York and Portland. There is, however, a large difference in the structure of planning and local governance between the United States and Canada. The United States also has a significantly larger population, as well as a higher incidence of poverty; these factors may have some effect on how planners interact with urban agriculture in each country.

Additionally, the research that has been done in Canada has mainly been focused on Vancouver and Toronto. Although they are two core Canadian cities, there is also value in examining other large and mid-sized cities to determine how urban agriculture and planning can work in that context. Efforts are slowly being made in this direction; Huang and Drescher (2014) conducted a study of ten municipalities of varying size in Ontario and British Columbia to examine their food and urban agriculture policy. Expanding this type research to all of Canada would give a fuller picture of the state of UA in this country.

Viljoen and Wiskerke (2012) mention the importance of moving away from scientific universalism in planning and instead putting more emphasis on place-specificity. This point is extremely relevant to the Canadian context; there are many cities (for example Kamloops) other than Vancouver and Toronto that have adopted urban agriculture into their development plans, and it would be interesting to take stock of how these strategies are incorporated in smaller or mid-sized cities, how they differ from large cities, and assess what has been done.

There is also a need to assess the success of measures that have been put in place. Much of the reviewed literature focuses on how planners can facilitate UA and how it can be incorporated into planning agendas. But once that bridge has been crossed, is it obvious that there has been any noticeable, measurable improvements in the community? It depends on what the goal of incorporating UA is; when the goal is improving food security or health, as it is in much of the developing world, it is easier to measure whether a community garden has actually contributed to achieving this end. But if the goals are less tangible, as they are in North America when they relate to social cohesion and sustainability, it is more difficult to assess whether or not the presence of urban agriculture has achieved its desired effects.

It is interesting to note that in the literature on planning and UA, plans do not emerge as a tool for planners to influence urban agriculture. It would be interesting to investigate whether or not the topics of food and UA are being incorporated into municipal plans, and what kind of impact they have.

The motivations of the community for implementing UA may also have an effect on what kinds of strategies are used and which policies are put in place. If UA is deemed

important by the community, what should planners do to facilitate that desire? Are there other measures for incorporating UA into planning practices than have already been discussed in this paper? How does the motivation of the community dictate which measures should be undertaken?

## **2.5 Conclusion**

As has been illustrated in this literature review, the subject of the urban food system, and specifically urban agriculture, has become an increasingly popular issue in the United States and Canada. There has been escalating pressure on planners to incorporate UA into their practice, and various strategies to ensure this is done have been discussed by scholars, researchers and planning institutions alike. There is, however, much research that can still be done in this area, and how this will manifest itself in academic scholarship remains to be seen.

## Chapter 3: Methods

The goal of this study is to explore how planning tools and policies have an influence on urban agriculture. The research strategy consists of internet-based data collection and analysis for the creation of an urban agriculture inventory, followed by a selection of case studies, for which a policy scan and semi-structured interviews are conducted. Case studies allow for in-depth and context-dependent exploration of an issue (Creswell, 2009), and can be found throughout the literature pertaining to planning and urban agriculture (Halloran, 2011; Masson-Minnock & Stockmann, 2010, Mendes, *et al.*, 2008). This chapter outlines the methods of data collection used, followed by a description of the analysis process.

### 3.1 Mixed Methods Research

Mixed methods research is a strategy that involves using both qualitative and quantitative forms of inquiry (Creswell, 2009). Specifically, this study uses a sequential mixed methods approach, which occurs when one method is used to expand on the findings of another (Creswell 2009). Because the research uses a quantitative method followed by a qualitative, it can be characterized as a sequential explanatory strategy. A sequential explanatory design is usually used when quantitative results are interpreted by collecting and analyzing follow-up qualitative data (Creswell, 2009). In this case, a systematic internet search is used to create an inventory of UA activity. Subsequently, a case study method is used to interpret the results of the inventory.



### **3.2 Data Collection**

In order to answer the first set of sub-questions regarding what evidence there is of UA in Canadian cities, it is necessary to conduct a systematic search of urban agricultural activities being practiced across the country. The data collected serve the research in two different ways: first as a means of providing a current snapshot of the state of UA in Canada; and second as a vehicle to inform the selection of case studies. There is evidence of this type of method being used in other research on UA, as well as in reports conducted by municipalities, organizations, etc (City of Edmonton, 2012; Fairholm, 1998; Corey & Routley, 2013). Often, examples from cities that are known to have a thriving urban agriculture community or a unique and successful UA project will be cited and used as inspiration and justification for municipalities looking to improve their own urban agriculture situation. A thorough and systematic search and record of UA activity has not, however, been conducted for Canada.

### **3.3 Sampling**

The sampling stage of this study is centred around the ten Canadian provinces. The three territories were excluded for several reasons, one being that based on the literature review and previous research, it was not expected that a significant amount of UA activity would be present in that region. Additionally, this study focuses on cities with a population of 50 000 or more, and there are no cities in the northern territories that have a population greater than 50 000.

Based on the gaps outlined in the literature review, this research examines both large and mid-sized cities. Many studies consider a mid-sized city to have a population within the range of 50 000 - 500 000 people (Seasons, 2003; Skorokhod et al., 2013).

There are eighty-six municipalities in Canada that fall within this population range and can be considered mid-sized (Statistics Canada, 2012). The eleven cities with a population greater than 500 000 are considered large. 2011 census data (population by municipality, over 5000) is used to select the cities based on their population.

This study divides municipalities into medium and large because the differences in the size of a city are likely to have an effect on UA. Factors such as available financial resources, proximity to agriculture, socio-economic conditions, etc., are factors that differ between cities of various sizes and are likely to influence the way UA is addressed. Thus, the ‘large’ category in this study consists of all eleven municipalities with a population of 500 000 or greater, as well as the largest city in each province not represented in that list.

<b>Study Large Cities</b>	
<b>City</b>	<b>Population</b>
Toronto	2 615 060
Montreal	1 649 519
Calgary	1 096 883
Ottawa	883 391
Edmonton	812 201
Mississauga	713 443
Winnipeg	663 617
Vancouver	603 502
Brampton	523 911
Hamilton	519 949
Quebec City	516 622
Halifax	390 096
Saskatoon	222 189
St. John’s	106 172
Saint John	70 063
Charlottetown	34 562

**Table 1: Study large cities**

In addition to the large cities in Table 1, the majority of mid-sized cities are sampled as well. Most provinces have a small enough number of mid-sized cities that all of them can be included in the inventory. Due to the larger number of municipalities in British

Columbia, Ontario, and Quebec, a simple random sample (SRS) is used to choose a selection of cities from each of these provinces. A confidence level of 95% and a confidence interval of +/-15% are used to determine the sample size. The use of SRS sampling allows for statistical validity where needed, but does not imply that the sample of cities is fully representative of all cities in these provinces, given contextual differences for example. Using Microsoft Excel, a random number is assigned to each city and ordered from largest to smallest; the appropriate number of cities are then chosen for each province starting from the top of the list. In the case that a municipality is deemed unsuitable (for example, some municipalities in the census do not contain an urban area), it is skipped and the selections continue until the proper number of cities are accounted for. In total, sixty-five of the eighty-six mid-sized cities are included in the first stage of data collection (see Appendix A for the complete list). Although all municipalities are unique, and a selection of them cannot truly represent all cities in Canada, time and resources constraints prevent every mid-size from being examined. A large sample of cities is taken in attempt to be as thorough as possible. The list of the mid-sized cities not included in the UA inventory can be found in Appendix B.

### **3.4 Inventory**

The purpose of the first phase of data collection is to determine how much UA activity is present in cities across Canada. Based on the definition of urban agriculture outlined in the introduction, as well as common themes throughout the literature review, eight different types of UA are chosen as the categories that are searched for within each city. These categories include: community gardens, food-producing green roofs or rooftop gardens, vertical farms, urban chickens, urban beekeeping, urban aquaculture,

small-scale farming, and an ‘other’ category for anything that does not fit into the previous seven types.

In order to collect this data, a Google search is conducted. A list of search terms (see Appendix C) is applied systematically to each city, and the websites that appear in the search are explored to determine how many of each type of UA activity of can be found. A website is followed if it seems to contain relevant information to the search term currently being used, or to another category in the list. Each website that provides useful information is recorded in a Microsoft Word document and the numbers for each category are then recorded in a spreadsheet in Microsoft Excel.

Some of the categories are in need of clarification. There are several types of community gardens that differ slightly from each other. The three main types are community gardens, allotments gardens, and collective gardens. Although there are slight differences between all three, they are all included in the ‘community garden’ category in the inventory. In addition, traditionally there are two types of green roofs, known as intensive and extensive. Often the vegetation grown on these roofs are plants and grasses native to the area, and usually do not consist of edible plants. Because it is rare to find a food-producing green roof, rooftop gardens are also included in the category. These will often consist of container gardens on the rooftop, but are not necessarily the intensive/extensive roofs that are integrated into the building system.

For many of these categories, it is not possible to collect an exhaustive number of what exists in each city. For example, it would be nearly impossible to know exactly how many families are raising chickens in their backyard at any given time. It is, however, possible to determine whether or not there is strong support for and/or presence of urban

chickens based on information that emerges from the Google search such as local news articles, evidence of motions to city council, community groups that are centred around raising urban chickens, etc.

### **3.5 Case Study Selection**

Detailed and intensive analysis of a single case is what distinguishes a case study design (Bryman, 2005); this type of research is used when a more in-depth and context-dependent exploration is required (Creswell, 2009). The case study approach is commonly employed in the study of urban agriculture (Cohen, 2012; Halloran, 2011; Masson-Minock & Stockmann, 2010; Mendes *et al*, 2008; Tornaghi, 2012; Broadway 2009).

Case study cities are selected from five separate regions: British Columbia, the western provinces (Alberta, Saskatchewan, Manitoba), Ontario, Quebec, and the eastern provinces (New Brunswick, Nova Scotia, P.E.I. and Newfoundland). B.C., Ontario and Quebec each have a fair number of cities to choose from, and can thus stand alone as their own regions. The western and eastern provinces are grouped together due to the small number of cities in each province, and the groupings give a greater choice for case study selection. One large and one mid-sized city are chosen from each region, for a total of 10 case studies.

The selection of the case studies is based on the level of UA activity discovered in the initial inventory. The focus of this research is on the most successful UA cities to try and determine if planning tools and policies have contributed to their success. The choices are based on which cities have the most varied types of UA, as well as the highest numbers in specific categories. For example in Ontario, Peterborough has the highest

number of community gardens (31), but only has three out of the eight different types of UA activities. Conversely, Kingston only has 22 community gardens, but exhibits six out of eight types of UA, with high numbers in the other categories as well. Therefore, Kingston is chosen over Peterborough for the mid-sized city in Ontario. This process is conducted for each of the five regions.

There are two notable exceptions to the rule that should be addressed. Toronto and Vancouver are excluded from the case study selection, despite the fact that they are both very successful and have reputations for having vibrant urban agriculture communities (primarily Vancouver). As discovered in the literature review, extensive research has been done on these two cities with regard to urban agriculture, and one of the goals of this research is to gain insight into other places in Canada that may have a dynamic UA community but have been under-represented in the literature. Because Vancouver is the only large city in B.C., two mid-sized cities are chosen as the case studies for that province. The following table shows the ten case study selections.

<b>Case Study Selection</b>					
	<b>British Columbia</b>	<b>Western</b>	<b>Ontario</b>	<b>Quebec</b>	<b>Eastern</b>
<b>Large</b>	Victoria (mid-sized)	Calgary	Ottawa	Montreal	Halifax
<b>Mid-sized</b>	Kamloops	Red Deer	Kingston	Saguenay	Fredericton

**Table 2: Case study selections**

### **3.6 Interviews**

The first phase of data collection, which culminates in the selection of ten cities for further research, allows the first set of sub-questions regarding what evidence of UA can be found in Canada to be addressed. The following two categories of sub-questions, however, require different methods of research to fully explore them. The questions relate to what planning tools are being used to influence UA, what kind of impact they have

had, and what non-planning related factors may also have an effect on UA. In order to answer these questions, a policy scan is conducted for each city, followed by semi-structured interviews with planners that work for each municipality.

### **3.6.1 Policy Scan**

The policy scan is helpful in answering the questions related to what planning tools are being used by municipalities to influence UA. An assortment of documents are examined including zoning by-laws, official plans, community garden policies, animal control by-laws, food plans, and various other documents that relate to food and urban agriculture. In the case of two-tiered municipalities, documents from both the regional and city levels are examined. The policy scan is also used for preparation and background knowledge that inform the semi-structured interviews. A brief summary of the policy scan for each city can be found in Appendices G to P.

### **3.6.2 Semi-structured Interviews**

Subsequently, semi-structured interviews are conducted with one or more planners that work for each of the ten case study municipalities. In a semi-structured interview, the researcher develops an interview guide, which consists of a list of questions that will be asked during the interview (Bryman, 2005). During the interview, the researcher generally follows the same order and wording of questions for each participant, but may deviate from the guide as they pick up on things that the participant is saying (Bryman, 2005). The benefit of the interview guide is that it ensures the same topics are covered in each interview, but the participant has freedom to respond however they choose and the interviewer may ask questions to further clarify the answers (Patton, 2002).

As discovered in the literature review, semi-structured interviews have previously been used by peer-reviewed scholars as a method for researching urban agriculture (Thibert, 2011; Sumner, Mair & Nelson, 2010; Colasanti, Hamm & Litjens, 2012). According to Patton (2002), the main purpose of an interview is to find out things that we are not able to directly observe. Planners are chosen for the interviews because of the insights they would be able to provide into planning strategies that cannot be gleaned solely from reading policies and bylaws. Specifically, planners would be able to assess the effectiveness and impact of the policies; they also tend to be engaged with the public and would have a keen sense of community attitudes and trends that may have an effect on urban agriculture.

### **3.6.3 Participant Recruitment**

To recruit participants for the interviews, a mix of snowball and purposive/targeted sampling is used. Snowball sampling has multiple stages, and often begins with one or few people and spreads from there (Neuman, 2007). Initially, contacts in the case study cities are reached out to via e-mail to inquire about further contacts that would have knowledge about urban agriculture. As suggestions for further contacts are returned, e-mails are sent requesting an interview. Often responses would suggest someone else who would have better knowledge of the subject matter. Contacting administrative staff at planning departments, or using the general inquiries function on city websites is another strategy; from there suggestions are made as to who would be the best person to contact.

According to Neuman (2007) purposive sampling is used to select subjects that will provide the most useful information. This can include people who are considered



experts in the subject area, or in a place of authority (Rowley, 2012). In this case, city websites are examined for contacts in the planning department that would have knowledge about food or UA.

Once the appropriate candidate is found, additional information about the research and a consent form are sent to the participants prior to the interview (See Appendices D and E). Once consent is obtained, phone interviews are conducted and recorded using Call Recorder software.

### **3.6.4 Interview Themes**

The interviews are divided into three main themes. The first consists of questions specifically about how the municipality is trying to influence UA. The questions are based directly on the literature review, which looks extensively at research into how planning and planners can have an effect on urban agriculture. Some examples of the questions include “Is the planning department actively trying to encourage urban agriculture?” and “Has the planning department conducted an urban agriculture land inventory?” The second theme tries to determine how the strategies discussed in the first theme have affected the level of UA in the community. Questions include “Do you monitor any urban agriculture indicators?” and “What policy and regulation changes related to urban agriculture in recent years have had the most impact (positive or negative) in your opinion?” The last theme centres around factors outside of planning, how the participants think they might affect UA, and whether or not the outside factors are more influential than the planning efforts (see Appendix F for the complete interview guide).

## **3.7 Data Analysis**

### **3.7.1 Transcription**

Once the interviews are conducted and recorded, each one is transcribed for the purpose of subsequent analysis. Data transcription involves writing down exactly what has been stated in an interview or focus group session (Bryman & Teevan, 2005).

Recording the interview and transcribing it at a later time allows the interviewer to be freer in their interactions with the participant as they do not need to write down what is being said (Bryman & Teevan, 2005). Although transcription does allow the participants' words to be saved, it can be quite time-consuming and result in large amounts of data to be analyzed (Bryman & Teevan, 2005).

### **3.7.2 Coding**

After the interviews are transcribed, the process of open coding is used to analyze the content of the interviews. Open coding occurs when broad categories, in this case generally based on the interview questions, are determined before the beginning of the coding process (Strauss & Corbin, 1998). As the transcription is read through, each line of text is assigned to a category. In addition to the categories set out at the beginning, other categories emerge as the data is analyzed. For example, a certain topic may be mentioned by various participants during the course of the interviews, even if there is not a question that specifically relates to it. Additionally, the initial broad categories can be broken down into more specific ones. For example, a broad theme originally outlined in the interviews is zoning, and how it affects UA. During the coding process it is helpful to break it down further into statements that relate to permissive and restrictive zoning.

Coding allows for patterns to emerge that may not have been originally apparent at the outset. (Strauss & Corbin, 1998).

## **Chapter 4: Results and Discussion**

### **4.1 Introduction**

The structure of this chapter is based on the main research questions and sub-questions, and the results from each phase of the research. To review, the main research question is “how do planning tools, policies, and regulations influence urban agriculture in Canadian cities?” The first section outlines the results of the urban agriculture inventory and examines what evidence of UA can be found in Canada. Using information gathered through a policy scan, the second section outlines the planning tools that are currently being used to influence UA and compares them to what was found in the literature review. Interviews with planners are used to discuss the role of those tools in influencing UA, as well as factors outside planning that planners believe can also have an impact on urban agriculture.

### **4.2 Section One: Inventory**

The inventory portion of this research is used to answer the first set of research sub-questions regarding what evidence of UA there is in Canada, what types of UA are being practiced, and where they are located. The following table shows the results of the UA inventory, and is stratified first by type of UA, and then by city size (large and mid-sized) and region (B.C., West, Ontario, Quebec, and East).

Urban Agriculture Inventory												
	Number Sampled	Community Gardens (per capita, per 100 000)	Green Roof (per capita, per 100 000)	Vertical Farm	Urban Chickens (allowed)	Urban Beekeeping (allowed)	Urban Aquaculture (present)	Small-scale farming (per capita, per 100 000)	Other			
<b>Size</b>												
Large	16	8.1	100%	0.9	68.8%	1*	31.3%	87.5%	18.8%	1.2	81.3%	87.5%
Mid-sized	65	6.4	100%	1.42	32.3%	0	23.1%	87.7%	1.5%	2.5	56.9%	33.9%
<b>Region</b>												
B.C.	16	9	100%	1.3	37.5%	1*	62.5%	87.5%	0	3.4	87.5%	62.5%
West	11	7.2	100%	0.9	81.8%	0	9.1%	72.7%	9.1%	2	72.7%	45.5%
Ontario	31	6.3	100%	0.8	25.8%	0	19.4%	87.1%	6.5%	1.5	67.7%	35.5%
Quebec	17	3.9	100%	1.6	35.3%	0	0**	100%***	5.9%	1.5	35.3%	29.4%
East	6	9.4	100%	2.2	50%	0	83.3%	100%	0	2.9	33.3%	83.3%

**Table 3: Urban agriculture inventory**

\*project went bankrupt

\*\*chickens are tolerated in some cities but officially not allowed

\*\*\*all French bylaws are silent on bees

#### 4.2.1 UA Types

The seven categories chosen for the inventory are based on the most common types of UA discovered in the literature review. These include community gardens, green roofs/rooftop gardens, vertical farms, urban chickens, urban beekeeping, urban aquaculture and small-scale farming. Each of these types are found to exist in Canada, although some are much more common than others.

Community gardens are the most widespread form of urban agriculture; as Table 3 indicates, they are present in every municipality included in the inventory. They also have high per capita numbers as compared to the other types of urban agriculture. Typically community gardens are accessible to all members of society and are usually located in a public setting. These characteristics make them easy to find information on to include in the inventory. Similarly, small-scale urban farms and green roofs are quite well-publicized, making the numbers for those categories more accurate. Community gardens, green roofs and small-scale farms are represented in the table in terms of the number per 100 000 people; the percentage indicates the percentage of cities in the category where they are present. For example, it is estimated that 56.9% of mid-sized cities in Canada have some form of small-scale farming, and there are approximately 2.5 farms per 100 000 people.

Urban chickens and urban beekeeping, on the other hand, are usually individual pursuits that people carry out in their own backyard, making it difficult to find concrete evidence of them. The percentages in the table, therefore, indicate the percentage of cities that allow chickens and bees in urban areas. Many animal by-laws are silent on urban beekeeping, however planners have indicated that the by-laws are usually interpreted as

permissive when it comes to bees. Therefore by-laws that do not mention bees are included in the inventory count as “permissive”. Urban aquaculture is not a very popular form of UA and it is rare to find these kinds of projects as evident in the low percentages in Table 3. Vertical farms are quite expensive to operate and the concept is fairly new, thus they are the least common form of UA, with only one vertical farm in Canada, located in Vancouver. That project, however, has gone bankrupt and has come to a standstill.

Apart from the first seven categories, there are seven other types of UA that emerged during the inventory process, and are included in the ‘other’ category in Table 3. The percentage indicates the number of municipalities that have a type of UA other than the original seven categories. Other forms of UA include gleaning, edible landscaping, grow-a-row programs, backyard sharing, food forests, urban orchards, and guerilla gardening. Food forests, urban orchards and guerilla gardening are the least numerous, with only one or two of these projects being undertaken. But activities like gleaning, grow-a-row programs, and backyard sharing proved to be quite prevalent, and in some cases more widespread than the original seven types of UA.

Gleaning is a process whereby fruit from trees on public land is harvested by volunteers and then often donated to a local food bank or given back to the community. Grow-a-row projects are usually administered by non-profit organizations and encourage people to use a row of their garden to grow produce that can be donated to a local food bank or other organization to provide fresh food to disadvantaged members of the community. Backyard sharing is a program where people with extra land in their yard can provide space for people to grow food who do not have access to land.

Even though these three types are quite common, it is possible that they are not mentioned in the literature review because of their informal nature. Most of the categories taken from the literature review, with the exception of urban aquaculture, need to comply with regulations of some kind. On the other hand, gleaning, grow-a-row and backyard sharing are more informal types of UA that are not necessarily governed by city regulations, and therefore would not show up in literature related to planning.

#### **4.2.2 City Size and Regional Differences**

As a general rule, large cities have more UA than mid-sized ones; they have higher percentages for the presence of each type, and per capita numbers are higher in all categories except green roofs and small-scale farming. When comparing regionally, British Columbia and the eastern provinces have the highest numbers of UA, both in terms of percentages and per capita numbers. The east outperforms B.C. in every category except small-scale farming.

#### **4.2.3 Analysis**

There are several results from the inventory that deserve a closer inspection. Green roofs and rooftop gardens are not very popular; in most regions less than 50% of the cities have green roofs. In the western region however, 81.8% of municipalities have green roofs and rooftop gardens. A possible explanation for this is that both Edmonton and Calgary have food plans where green roofs and rooftop gardens are specifically encouraged as a method of food production (Food and Urban Agriculture Advisory Committee, 2012; Calgary Food Committee, 2012).

Raising chickens in urban areas is a controversial issue in many Canadian cities, and there are not many municipalities that allow for the keeping of urban chickens. The



east coast, however, has a very high percentage of municipalities (83.3%) in which urban chickens are permitted. This may be due to the fact that the number of cities sampled on the east coast is quite small compared to the other regions. There are very few large and mid-sized cities on the east coast to examine, necessitating a small sample size, but the small number may play a part in the high percentage of chickens.

In general British Columbia and the east coast have the highest numbers in every category in the UA inventory. There is no evidence, however, of urban aquaculture in either of those regions. Urban aquaculture is not a common form of UA, and exhibited low numbers in general. But to have no urban aquaculture, especially compared to the high numbers in everything else, is unusual. A possible explanation for this could be the proximity of these places to the coast. These municipalities most likely would have easy access to fresh products from the ocean, thus negating the need for urban aquaculture. People that live in the interior of the country, however, may be looking for an alternative and sustainable method of obtaining fresh fish.

When looking at the 'other' types of UA, there is a significantly higher percentage in large cities with other types of UA than mid-sized; 87.5% for large cities as compared to 33.9% for mid-sized. This is quite a large discrepancy, but a possible explanation could be that with more people in larger municipalities, more innovation is happening and there is more support for new and creative ideas. Borja and Castells (1997) assert that in the new network society, the power of nation-states is declining and the connections between global cities are increasing, allowing for networking, competition, and the transfer of ideas between cities. In terms of UA, once these new ideas are generated and have been

proven successful in the larger municipalities, they get passed on to other areas and smaller cities.

Quebec has quite low numbers compared to the other regions, despite the fact that Montreal itself is considered to be one of the more progressive cities in Canada with regard to UA. It is surprising, therefore, that there is such a discrepancy between Montreal and the rest of the province. A technical limitation that may account for this is that the language barrier while researching may not allow for the french cities to be explored as exhaustively as the rest of the english cities.

There is a strong subsidy culture in Quebec agriculture, however, that may better explain the low numbers. Quebec agricultural producers receive both direct payments and tax assistance from the federal and provincial governments (Minardi, 2009). Urban agriculture, therefore, may get overlooked or be seen as unnecessary in a culture where a high value is placed on the traditional agricultural sector.

Another possible explanation is that Quebec is a predominantly Catholic province, with conservative, right wing populations that may oppose some aspects of urban agriculture. For example, a couple in the city of Drummondville fought a highly publicized battle to be able to grow vegetables in their front yard, despite public opposition and restrictive municipal regulations. This may not be representative of every city, but gives an idea about the kind of opposition that could be given to UA.

### **4.3 Section 2: Policy Scan and Interviews**

Based on the results of the UA inventory, ten successful cities are selected for further inquiry. The choice of case study municipalities is determined by their high levels of urban agriculture and the desire for cross-Canada representation (the selection method

is discussed in detail in the methods chapter). The following table outlines the data collected for each of the case study municipalities. For each case study, a policy scan and interviews are conducted to gain further insight into the reasons behind their success with urban agriculture.

Urban Agriculture Inventory: Case Study Selections									
City	Population	Community Gardens (per capita, per 100 000)	Green Roof (per capita, per 100 000)	Vertical Farms	Urban Chickens	Urban Beekeeping	Urban Aquaculture	Small-scale farming (per capita, per 100 000)	Other
Kamloops	85678	21.01	1.17	0	Not allowed*	Allowed	0	4.67	1
Victoria	80017	20	2.5	0	Allowed	Allowed	0	11.25	3
Red Deer	90564	8.83	1.1	0	Allowed	Allowed	0	3.31	0
Calgary	1096833	13.68	0.36	0	Not allowed	Allowed	1	1.46	1
Kingston	123363	17.83	1.62	0	Allowed	Allowed	0	4.86	2
Ottawa	883391	4.64	1.58	0	Not allowed	Allowed	0	1.02	3
Saguenay	144746	6.22	0.69	0	Not allowed	Allowed	0	1.38	0
Montreal	1649519	9.64	1.09	0	Not allowed	Allowed	1	0.18	2
Halifax	390096	5.38	0.26	0	Allowed	Allowed	0	2.31	2
Fredericton	56224	14.23	3.56	0	Allowed	Allowed	0	3.56	2

**Table 4: Urban agriculture inventory: Case study selections**

\*chickens are allowed on residential lots larger than one acre, but not in the urban core

#### **4.4 Policy Scan**

The policy scan portion of this research is used to help answer the sub-question regarding what types of planning tools are being used to influence UA. Several tools were discovered in the literature review and consist of stakeholder engagement, food policy councils (FPCs), land inventories, zoning and by-laws, and urban design. Zoning and by-laws are the only tools from the literature review that emerge as being significant in the policy scan and interviews, and these will be discussed in further detail in the next section.

Engaging stakeholders is an important strategy that planners can use to influence UA (Halloran, 2011; Campbell, 2004). In interviews with participants, this mainly took the form of public engagement. There is not, however, evidence of significant public engagement related specifically to urban agriculture. As discussed by the participants, this is because most municipalities respond to requests from the public as opposed to initiating the projects themselves. Therefore they are not specifically requesting public input about UA, but discovering through other public engagement processes that it is something that is desired. The participant from Kamloops is the only one that mentioned a more active engagement process including meetings with targeted stakeholders, events, city booths at farmer's markets, etc.

Food policy councils (FPCs) are another tool that emerged from the literature as a possible way for planners to have an effect on UA (Campbell, 2004; Halloran, 2011; Pothukuchi & Kaufman, 1999; Morgan, 2009; Cohen, 2012). Results show that Victoria, Kamloops, and Halifax all have FPCs in which planners are actively engaged. This is consistent with the results of the inventory, in that the east coast and B.C. have the most urban agriculture. The FPCs in B.C., however, have a much longer history than the one in

Halifax. Both of them were established in the early-mid 1990s, and have been a part of encouraging the proliferation of UA out west. The FPC in Halifax started through a community grassroots movement, and only recently has the municipality and Public Health gotten involved to help create a food strategy. Other municipalities have FPCs that are informal organizations without ties to the municipal government, or they do not exist at all.

The literature review identified land inventories as another tool that can be used and/or provided by planners to influence UA (Masson-Minnock & Stockmann, 2010; Halloran, 2011; Mendes, *et al*, 2008). In reality, it is uncommon to find a municipality that has completed a land inventory specific to urban agriculture. According to interviews with planners, often they are considered too expensive and time-consuming, without enough value to warrant the cost of conducting one. When a municipality does not have a land inventory, site assessment for UA is usually done on a case-by-case basis. The group that wishes to use the land must come to the city, which will then assess the viability of the land for UA. But to pre-emptively conduct a comprehensive land inventory focused on UA is a large undertaking. Of the case study municipalities, Kamloops is the only one that has completed a land inventory specific to UA, although the city of Victoria has plans to do one as part of the update to their community gardens policy. The respondents from Calgary explained that the first phase of a land inventory was conducted as part of the food action plan, however it has come to a standstill due to unforeseen roadblocks such as privacy issues.

Urban design as a way for planners to influence UA is the last theme that emerged from the literature review, however it was not mentioned by any participants in the

interviews. Some of the documents examined in the policy review do mention urban design. For example, Halifax's Regional Municipal Planning Strategy talks about integrating small-scale food production into site and building design (see Appendix P); the Kamloops Social Plan recommends considering urban gardens as a condition for density bonusing (see Appendix G); and Ottawa's Sustainability Plan mentions requiring small plots or rooftop gardens in new developments (see Appendix L).

Although these are the dominant themes that came out of the literature review, the policy scan yielded different results. The main ways that planners seem to be trying to influence urban agriculture is through traditional planning tools such as zoning and bylaws (also mentioned in literature review), official plans, other types of plans, and policies.

The documents that are explored are separated in to four different categories: Official Plans (or the equivalent document), other types of plans (ex. social plan), by-laws, and policies. Some of these documents may not mention urban agriculture specifically, but talk about food in general or the importance of local food and agriculture. In those cases, they are included in the scan if they are deemed to have enough relevance to UA. Table 5 provides a summary of which planning documents address food or urban agriculture. See Appendices G to P for a more detailed summary of each document.

<b>Policy Review: Planning Documents</b>				
<b>City</b>	<b>Official Plan (or equivalent)</b>	<b>Other Plans</b>	<b>By-laws</b>	<b>Policies</b>
Kamloops	Yes	Yes	Yes	No
Victoria	Yes	Yes	Yes	Yes
Red Deer	No	Yes	Yes	No
Calgary	Yes	Yes	Yes	Yes
Kingston	Yes	Yes	Yes	Yes
Ottawa	Yes	Yes	Yes	No
Saguenay	No	No	Yes	No
Montreal	Yes	Yes	Yes	No
Fredericton	No	No	Yes	No
Halifax	Yes	No	No	No

**Table 5: Policy review: Planning documents**

#### **4.4.1 Official Plans**

There is not one type of document that is common among every city that addresses food or urban agriculture. 7/10 of the case study municipalities, however, have included something related to food or urban agriculture in their official plan (OP), or the equivalent document. When talked about in the official plans, urban agriculture and food are included under a wide variety of sections, from cultural and social planning, to economic development, to community design, and so on. The City of Victoria is unique in terms of their plan as it includes an entire section on planning for the food system. Within this section there is a sub-section that is devoted wholly to urban food production. The plan was adopted in 2012 and according to interview participants, the food section was included as a response to the public's desire for it.

There are two main topics in the OPs that affect UA: local food production and community gardens.

##### **4.4.1.1 Local Food Production**

Although the term local food production is not synonymous with urban agriculture, UA certainly falls under its umbrella, and the inclusion of it in the official



plan shows that food is becoming a topic that planners are engaging in. 5/10 municipalities mention the importance of local food production in their OP, and the ways in which it is addressed can be divided into two main themes. The first theme is providing space for local (and in some cases urban) food production. Often this takes the shape of allowing certain green spaces to be used for growing food, and protecting strategic parcels or corridors of land. This has a greater relationship to UA as often this land can be located within the city.

The second theme has to do with increasing awareness of local food production and promoting it, as part of social and cultural planning as well as economic development. This has a wider scope than just urban agriculture, as municipalities want to promote local farming and agriculture to enhance local economic development, and this is often directed to large farms located on land outside the city. Although not directly related to UA, it does play a part in enhancing the culture of local food and promoting the importance of food, and the logical next step is extending these values to UA and food production within the urban area.

#### **4.4.1.2 Community Gardens**

In addition to local food production, the other most common UA topic in official plans is community gardens. Every municipality that includes food or UA in their official plan specifically mentions community gardens. The reasons vary from plan to plan and can include promoting self-reliance, enhancing quality of life, improving health, and developing community initiatives, but the common thread is that they all consider community gardening a positive activity and want to promote it. Generally this takes the form of providing more space for community gardens. This can be on a larger scale, for

example ensuring that greenfield spaces allow space for food production. Some OPs, however, mention more specific strategies like integrating community gardening into site and building design in new developments. Having a widespread allowance for community gardening in terms of land use is something that a few of the OPs mentioned; this often takes the form of specifically allowing community gardening in all land-use designations.

#### **4.4.2 Other Plans**

There are plans apart from a city's OP that can also have an effect on UA. 7/10 of the case study cities mention food or UA in a plan other than the OP. Although these documents may be published by a variety of city departments, planners often have a hand in writing them, thus they constitute another avenue for planners to exert influence over UA in their city. Calgary and Kamloops are the only case study cities with plans that are solely dedicated to food; Kamloops also has an urban agriculture plan but it is still in draft form. For the most part, however, the subject of food is restricted to sections within larger social, environmental, or sustainability plans, to name a few. For example, Kamloops has sections dealing with food, and in some cases urban agriculture, in their social plan, agricultural area plan, and Sustainable Kamloops plan.

##### **4.4.2.1 Food Plans**

Kamloops and Calgary are the only two municipalities that have a plan that deals solely with food. In *Calgary Eats! A Food System Assessment Action Plan for Calgary* (Calgary Food Committee, 2012) a vision for a sustainable food system is outlined, and an assessment of the current food system in Calgary is conducted. A profile of the city is provided and each element of the food system is analyzed, with recommendations and

action plans provided to close the gap between the current food system and the vision. A lack of data was identified as one of the biggest challenges, as there is not the appropriate data available to develop indicators or measure progress.

In Kamloops, the City, the Interior Health Authority, and the Kamloops Food Policy Council (KFPC) came together to create the Community Food Action Initiative. One of the major projects of this initiative was to create a *Food Action Plan* (Interior Health, 2006). The plan is centred around four main topic areas: short-term relief actions; capacity building strategies; food policy development and redesign; and economic development. For each area, goals were set and actions were provided as a way of trying to meet those goals. The main themes of the recommendations include: support for the KFPC; building connections between economic development groups and food organizations; raising awareness of local food issues; and development of policies for urban food producing gardens.

According to the participants from Kamloops, the City also has an urban agriculture plan, however it is still in draft form.

#### **4.4.2.2 Other plans**

There are three main ways that plans address food and urban agriculture: encouraging UA, enhancing conditions for UA, and promoting local food. The most common language used is by expressing the desire of the municipality to encourage UA. This can be done through various means such as encouraging UA initiatives and projects, promoting education in schools and other programs about local food, growing your own food, etc., and encouraging development of community gardens. Many of these references to UA are quite vague, without specific details about how it will be done.

Some plans, however, have more specific guidelines about how to enhance conditions for urban agriculture. These generally take the same form as in the official plans, through making land use guidelines more permissive and allowing UA activity in many, if not all, land-use designations. Additionally, in Ottawa, Red Deer, and Kamloops incorporating gardening, green roofs, and edible landscaping into new developments are practical suggestions for how to increase the amount of UA in the city.

These plans are also similar to OPs in that, on a larger scale, they want to promote local food and agriculture, mainly for reasons of economic development. Plans in Ottawa, Kamloops and Kingston all talk about enhancing the local food economy by promoting local farmers.

Strategies that are less common, and only mentioned in Kamloops' and Kingston's plans include creating a food policy council or strengthening ties with the one that already exists, developing a food strategy or plan, and creating an inventory of UA projects (such as a map of all the community gardens in town).

#### **4.4.3 By-laws**

##### ***4.4.3.1 Zoning By-laws***

By-laws are the most common and the most concrete way in which planners can have an effect on urban agriculture. Zoning by-laws and animal by-laws are the two types of documents in this category that have the most influence on UA, and 9/10 of the case study cities include provisions in their by-laws that affect UA. Zoning regulations typically control where UA is allowed, conditions for growing (ex. is indoor growing allowed in green houses) as well as the regulations regarding commercial urban

agriculture (farm gate sales, etc). Some zoning by-laws have community gardens, and occasionally urban agriculture, as a defined use.

There are many aspects of zoning by-laws that may affect UA intentionally or unintentionally. In the policy scan, zoning by-laws are examined for specific references to UA, and the most common of these are community gardens. Some municipalities have urban agriculture defined as a use, but more often reference to intensive agriculture is used. The allowance of farm gate sales is another way in which UA can be affected, as it determines whether or not one is allowed to sell the products of one's garden, farm, etc.

#### ***4.4.3.2 Animal Control By-laws***

Animal control by-laws dictate the keeping of animals in the city, which has an effect primarily on urban chickens and beekeeping. The keeping of livestock is generally not allowed in the urban area, but some cities have started to change their by-laws to allow for urban chickens. Urban beekeeping can also be affected by animal control by-laws, however most of them are silent on the issue, and therefore bees are usually permitted by exclusion.

There are three different ways in which the animal by-laws can address urban animals: they can be explicitly allowed; explicitly prohibited; or not mentioned. Urban chickens have been a controversial topic in recent years, and there are not many Canadian municipalities that allow chickens to be raised in urban areas. However 5/10 case study cities specifically allow urban chickens, although many have restrictions on the number of chickens that can be kept or the location of the coop. The animal by-laws explicitly prohibit the keeping of chickens in Calgary and Ottawa. In Saguenay chickens are not included in the list of birds that are allowed in the city, and therefore are prohibited by

exclusion. Halifax is the only municipality in which chickens are not mentioned in the by-law. Livestock in urban areas is prohibited in most animal by-laws, and chickens are often included as livestock in the definitions. Due to the recent resurgence in popularity of backyard chickens, municipalities have been amending their by-laws so that chickens are allowed.

It is interesting to note that there are no large cities (from the case studies) that allow urban chickens; the 5/10 cities mentioned above are all mid-sized. A simple explanation may be that backyard chickens can cause more of a nuisance in crowded areas, thus making the idea less feasible in large cities with dense urban areas. Additionally, in smaller, mid-sized cities there is more of a connection to the surrounding land, where farming is more visible, and this may pre-dispose people to being more accepting towards chickens in the city.

Urban beekeeping is another controversial issue, although it has not been as widely publicized as the urban chicken debate. There are only two cities, Kamloops and Victoria, that specifically permit urban bees and have provisions and rules for how they are kept. The rest of the case study municipalities do not mention bees in their by-laws, and thus many cities interpret them as being allowed by exclusion.

#### **4.4.4 Policies**

Very few municipalities have policies relating to urban agriculture. The most common is a Community Gardens Policy, which provides guidelines for the development and operation of community gardens. They set out goals for the establishment of more community gardens, and outline the city's responsibilities. Both Victoria and Kingston have a community gardens policy, and these two cities also have the second and third highest numbers of community gardens per capita, respectively.

#### **4.4.5 Size and Regional Distinctions**

There does not seem to be any pattern relating to city size and the mention of UA in planning documents. Regionally, Quebec and the east coast do not have as many policy documents that address urban agriculture. Most cities from Ontario, B.C. and the West mention UA in at least 3 out of the 4 types of documents. Kamloops and Victoria, in B.C., address food and UA in 3/4 and 4/4 types of planning documents respectively. This is consistent with the inventory results, where B.C. has high levels of urban agriculture.

There is a discrepancy on the east coast, however where food is not addressed in many planning documents at all, and yet UA is still quite prevalent. In B.C. it is possible that the cities are being influenced by Vancouver, which is considered the Canadian leader when it comes to urban agriculture. This came out in the interviews as well, where the participants from Victoria discussed how policy change in Vancouver affects the interest levels in UA in their own city. The east coast does not have a major city like Vancouver with progressive UA practices to influence them. Halifax is the largest city on the east coast and is just starting to incorporate food into their Regional Municipal Planning Strategy, but this is quite a recent development. Perhaps once this becomes more established it will create a trickle-down effect in the same way that Vancouver has done in the west.

#### **4.5 Role of planning tools**

This section primarily addresses the research sub-question “what impacts do the aforementioned planning tools have on UA?” Interviews with planners from the case study cities provide illumination as to how the planning tools listed above may have an

effect on urban agriculture. This section is divided into the main themes that emerged from the interviews.

#### **4.5.1 UA in the community**

The participants were asked how they would characterize urban agriculture in their community. This question does not directly relate to how planning influences UA, but sheds some illumination on whether or not planners are engaged with food and UA issues, if it is on their radar, and how they understand it. If planners show an interest in food and UA, this may be reflected in the policies and by-laws that they are responsible for. Below are comments that exemplify the common answers received in response to this question.

*RD1: I think there's a trend happening here as well where there's a resurgence in...food.*

*Ki1: Yeah, like there's definitely an interest, ...there's a lot...of people around that are passionate about local food and educating people as far as where their food is coming from.*

*Ka1: But there's also another sort of subset of the population that either has no interest or...is leaning towards the opposite as far as...we don't want this, we don't want that, we don't want chickens running around and this and that. So that's been kind of controversial because there are those both sides.*

Most of the participants expressed the view that urban agriculture is highly valued in the community, and that there are many community groups and local officials who are heavily involved in trying to explore and promote UA. Many of the participants also discussed that the fact that there has been a resurgence of interest in UA in recent years, and it has become quite trendy.

Generally urban agriculture is a popular activity, however there is some opposition to it as well. There are some forms of UA that have proved to be controversial



issues within communities, the main one being the keeping of backyard chickens. There has also been some resistance to growing vegetables in front yards. One of the participants from Ottawa discussed how in some neighbourhoods the prevalence of older, right-wing attitudes can lead to a lot of pushback for people who want to convert their front yard into a garden.

These responses indicate that planners do in fact have an interest in UA. All of the participants had some idea about the state of UA in their community, which shows that at the very least there is an interest and an awareness that is being developed. This is consistent with what was found in the literature review regarding the evolution of attitudes toward the integration of food and planning. There is evidence in the literature that planners are becoming more interested in food and urban agriculture and desire a greater involvement in these areas. The interviews with participants indicate that this is the case in municipalities across Canada.

#### **4.5.2 Encouragement**

The participants were also asked if the planning department is actively trying to encourage urban agriculture. The inclusion of food or UA in planning documents and permissive by-laws would suggest that the planning department is trying to encourage urban agriculture. The responses to this question, however, show that this is not necessarily the case.

Answers vary widely but a main theme touched on by participants is that generally the planning department is trying to encourage urban agriculture, but it is important to distinguish between encourage and enable. Some cities have taken the initiative to include food and UA in their plans and by-laws, but more often the initiatives

are community driven, with the planning department responding to projects on a case-by-case basis or based on feedback from the community. Some of the participants acknowledge this distinction and recognize that the planning department plays a responsive role. Many participants, however, said that the planning department is trying to encourage UA, but reading further into their response it is clear that they did not distinguish between the fact that the planning initiatives are often response-based, and not actually initiated by the city.

The first set of responses illustrates a variety of different ways in which planning departments are actively trying to encourage UA.

*RD1: And so what we did at that time to encourage that...we changed our bylaws to allow community gardens in all districts.*

*Ka1: I will also say that we are in the process of developing an urban agriculture plan/community food strategy.*

*C1: So what the planning department for example does is usually they have a policy accompanying those plans that encourages things like community gardens and urban agriculture or use of for example boulevards for activities like that.*

*Ki1: Because it's been prohibitive cost-wise the way that the city has tried to make the process more accommodating is by starting a community garden grant process.*

*H1: So the three of us kind of came together as a working group to try to figure out... the original goal of creating a food strategy and that's grown into the development of the Halifax Food Policy Alliance.*

Several different strategies for encouraging UA were identified, but the most common answers involve changing by-laws to allow for more UA uses. Some cities have begun to allow the keeping of backyard chickens, as well as making zoning by-laws more permissive so that UA uses can be widespread. Several municipalities have tried to

encourage community gardens by providing start-up funds for community garden groups who want to garden on city-owned land.

Some participants indicated that it is not necessarily the city that is leading the charge when it comes to UA initiatives, but more often the initial interest is coming from the community. The departments will respond to specific requests from community associations and members in order to help facilitate and get projects off the ground, but have been more reticent to actually take the initiative when it comes to UA, thus playing a more enabling role.

*V2: I would actually not say that the planning department is trying to encourage urban agriculture...I think because there's so much community, there's a distinction I think between encourage and...enable... It's much more about the community coming to us rather than the city taking the lead in initiating urban agriculture projects.*

*C1: And so often it's...come back to...a response based approach where when there's a request or when there's a community member or association kind of driving that and identifying a piece of land and then it seems like things have been...productive.*

Part of the reason for the hesitation by municipalities is that efforts to encourage some UA initiatives can prove to be controversial and, in the end, unsuccessful. The participants from Calgary discussed an instance where the planning department did try to take the lead in initiating a UA project and advocated for the allowance of urban chickens, but in the end were not successful.

*C1: I think where we learned our lessons in terms of being more project-supportive than going ahead and you know reaching out and doing something proactively was that the chickens we did proactively and then it was questioned whether there's actually public demand for it, and if there's not enough demand for it why do we risk all of that.*

Situations like this can cause planners to be more reticent in initiating UA projects. The participants from Victoria also mentioned a situation in which the zoning by-law was proactively changed to allow for commercial urban agriculture. However there has not

been much uptake; they reported that only one license for commercial UA had been issued at the time of the interview. They suggested that the city is trying to explore the situation and gain some insight into why the initiative has not been successful.

#### **4.5.3 Zoning and By-laws**

Zoning and by-laws are perhaps the most common and concrete tools that planners can use to influence urban agriculture. Most of the participants characterize their zoning as generally permissive when it comes to UA. Community gardens are a common use and are often allowed in all or most zones. Several municipalities allow for chickens to be kept on residential property, although there are often restrictions on how many and where the coop is located relative to adjacent properties. Urban beekeeping is commonly permitted, or often it is not mentioned at all in the by-laws, leading many municipalities to interpret it as allowed by exclusion.

*RD1: We're changing our bylaw to better support community gardening...as well as the...adoption of allowing chickens within your...residential lot.*

*V2: Victoria has the most permissive regulations in all of North America on chickens.*

*C1: There's actually very little they identified that would prevent urban agriculture activities.*

*C1: The bees are not mentioned so they're now allowed by exclusion from the bylaw.*

In terms of restrictions the most common themes were restrictions on commercial urban agriculture and animal control bylaws concerning livestock (for example as that pertains to raising backyard chickens). Livestock is usually prohibited from being kept in the city outside of agricultural zones. Sometimes chickens are included in the definition of livestock, and sometimes the by-laws will classify them separately.

*C1: The bylaw actually clarifies that you're not allowed to house or breed livestock on your private property and then it's identified or classified what counts as livestock and chickens are amongst them.*

Restrictions on commercial urban agriculture were a concern for several of the participants. Although zoning by-laws are usually permissive with regard to where food can be grown, once the commercial aspect becomes a part of it, it becomes much more difficult. For example:

*Ka1: You can't necessarily set up a stand outside your house, in the city, and sell product from your garden for example, so that's kind of a very small scale but I can see that as being a bit...restrictive for urban agriculture.*

*H1: The main restrictions come when there's any kind of a commercial element in it. So you can grow stuff on your property, they can grow stuff on their property for their...use as an organization, but...if I wanted to try to sell it for profit or if they wanted to sell it for profit that's when the commercial designation kicks in and that's where there's a lot of restrictions.*

Generally community gardens would not be affected by these rules as people are growing food for their own consumption. But small-scale farming in the city would need to comply with commercial regulations, as well as people who want to raise bees or chickens in their yard to sell eggs or honey. The participants saw this is a large barrier to UA, and planners from both Victoria and Halifax discussed how their municipalities are trying to modify these regulations to become more permissive.

It is interesting to note that in the literature and interviews with planners, this commercial aspect is one of the key issues when talking about UA. Many definitions of UA require a commercial element in order for something to even be considered urban agriculture (Forster, n.d; Mougeot, 2000; Smit, Ratta, & Nasr, 1996). Sometimes community gardens are not considered UA because the products of the garden are not necessarily being sold for profit.

However, while collecting data for the inventory and through interactions with people in everyday life, the commercial aspect of UA does not seem to be a big driver behind people's support for and interest in UA. Speaking anecdotally, many people are involved in UA projects because of their desire for healthy, local, food and concerns about sustainability and the environment, and not a desire to make a profit. This is evidenced by the fact that in Victoria, by-laws have been updated to allow for commercial urban agriculture, but according to the participants there has been negligible interest in obtaining these licenses.

#### **4.5.4 Policy Change**

The next topic that participants talked about was recent policy changes that they saw as having an effect on UA in their municipality. This question provides illumination as to whether or not the documents analyzed in the policy scan have actually managed to make an impact on the success of UA. Changes to zoning and by-laws are mentioned most often by participants as having a significant effect on UA. This is reflected in the literature, where it is suggested that one of the best ways for planners to influence UA is to redesign by-laws and city ordinances to better accommodate for UA. Generally this consists of making animal control by-laws more lenient in terms of allowing urban chickens or bees. Victoria also took the initiative to allow commercial urban agriculture, but, as discussed earlier, the participants indicated that there has not been much interest in that so far.

*RD1: Well I think the urban chickens more recently...so now it's explicitly allowed.*

*C2: An interpretation of the animal bylaw and...allowing urban bees.*

*V2: I think one change...that we have had in the last few years...was the introduction...of the allowing commercial urban agriculture as a home-based business. And...that's one that we've been keeping our eye on because there just hasn't really been much uptake to that at all.*

Including food and urban agriculture in recent plans is another common theme.

The participant from Kamloops expressed the opinion that including UA in the social plan and cultivating a relationship with the FPC were the actions that had the most impact on UA in recent years. Additionally, the participant from Halifax thought that the recent inclusion of food and UA in the Regional Municipal Planning Strategy would have a large impact in the coming years.

*H1: Another thing that I think will have...significant ripple effects, is as I said the regional plan...So any new planning policies that we create have to look at how to promote food security, so...provisions for urban agriculture will be part of the development of any new policies moving forward.*

An interesting response was given from the participants in Victoria who stated that highly publicized regulation changes in Vancouver have prompted people to take an interest in UA and inquire about what is allowed in Victoria. They felt that policy change in Victoria itself, however, is not a big driver; it has more to do with community interest.

The participant from Kingston indicated that the development of a community garden policy has had an effect on UA in recent years. The city has set up a community garden grant program that has made it easier for groups to start and maintain a garden. There are many factors (discussed below in the barriers sections) that can make community gardening quite cost-prohibitive, and the program can help to alleviate some of that initial cost.

#### 4.5.5 Indicators

Another way for planners to keep tabs on the changes in their community is by monitoring indicators related to urban agriculture. This way they can see if the policy changes that are occurring are actually making a difference with regard to UA. The most common indicator that participants from most municipalities cited is related to community gardens; usually the number of community gardens in the city is kept track of, or the number of gardens per capita. The participants from Calgary mentioned monitoring indicators that are related to UA but are quite high-level (related to health, for example). These are more difficult to measure because there are many factors that can make a difference in the outcome apart from UA. Neither Ottawa nor Red Deer are monitoring indicators related to UA.

#### 4.5.6 Barriers

Many of the planning tools and policy changes examined so far have been looked at through the lens of how they have a positive influence on UA. But there are elements that can also have a detrimental effect. Participants were asked about what they saw as a barrier to urban agriculture in their community. Many of the responses overlapped with the responses regarding restrictive zoning and by-laws. For example the animal by-laws that do not allow urban chickens are considered a large barrier to UA. The participants from Calgary noted that particular by-law and the fact that it did not go through had a visible effect on UA in the city.

*C2: [The urban chicken bylaw] wasn't allowed through and so I think that really changed the trajectory in Calgary as well around urban agriculture it kind of slowed everything down.*



*V2: We don't have urban agriculture...defined as a use in our zoning bylaw so what that means is...say I want to set up...a greenhouse operation... in the city, or I want to set up a commercial farming, well we have to send them to the light industrial area of town. Because there really isn't anywhere else in our zoning bylaw where it's permitted as a use.*

A few participants also talked about the difficulties around setting up a community garden, and how there are many barriers that make it difficult for the groups who want to start one. Issues such as access to water, restrictions as to what can be grown on city land (ex. fruit trees are not allowed on city property in Kingston), insurance, needing vehicle access permits, requiring support from surrounding neighbours, etc. Very small, specific restrictions such as these can make it extremely difficult for groups to actually start a community garden. For example...

*Ki1: Another big issue that we hear about is that all community gardens would require general liability insurance with the City of Kingston covered and so the cost of that can be prohibitive...But across the board water access is a big one...Water access and insurance.*

*V2: There's a huge onus on the groups that want to establish a community garden to show that they have a very, very high level of support from the neighbours...So we've had a number of community garden...proposals that were basically abandoned...by the groups who brought them on over the last few years because...there just wasn't that level of community support in the immediate neighbours for their proposal.*

Some of the municipalities are working to remove these barriers by providing funding for community gardens. For example, Kingston has a community garden grant process that provides funds for the start-up and maintenance of gardens on city-owned land. Additionally, as discussed earlier, there are many barriers to commercial urban agriculture and having UA as a home-based business. These responses reflect what emerged in the literature review regarding land-use restrictions.

The concept of NIMBYism (not in my backyard) can also pose a challenge for UA. The main concern about UA projects has to do with aesthetics; residents often do not want the more natural looking landscape of urban agriculture to take away from the manicured, landscaped look of a park or neighbourhood lawn. Respondents from Ottawa, Kingston and Victoria all acknowledged that NIMBYism has made it difficult to get certain UA projects off the ground. In the previous section, the respondent from Victoria indicated that a high level of support from the neighbourhood is needed to start a community garden, and it is often hard to get that level of community support.

The respondent from Kingston talked about some of the more specific objections that people have to UA. For example, she indicated that some people think that the raised beds used in some community gardens look like coffins. Additionally, residents whose property borders on a park can object to anything that will ruin the natural sightlines of the park, such as compost bins or toolsheds. Finally, one of the respondents from Ottawa mentioned the difficulties of setting up a vegetable garden in her own front yard because of the older, right-wing attitudes in her more traditional neighbourhood. These are all examples of NIMBYism posing a problem for UA.

Another theme that emerged from the interviews, predominantly from the western municipalities, were the barriers posed by provincial legislation.

*Ka1: This is at a higher level but a lot of the provincial regulations are specifically for land that's within the agricultural land reserve...and those same policies don't apply to land that's not within the ALR...There's no land within the urban framework that falls in that reserve.*

*RD1: The production of food on municipal reserve where somebody else could gain a profit...There's some provincial rules as to what can and can't be done...In that aspect I'd say there's restrictions, it's more...cities having their hands tied, being creatures of the province.*

In the case of Kamloops, it is more about urban areas being left out of the agricultural land reserve, thus there is not land specifically designated for agriculture within the city. In Alberta, there are provincial regulations governing what city-owned land can be used for; it is not possible to sell produce from gardens on municipal land because of regulations stating it can only be used for social or recreational uses.

The participants from Victoria noted that often it is not a whole policy that is flawed, but there is some small aspect that can make things difficult, and that was reflected in other answers as well, if not expressly stated.

#### **4.6 Outside Factors**

This section address the sub-questions “What are the other factors that have an effect on UA?” and “What level of impact do they have as compared to planning tools?” Although inclusion in planning documents may be a factor that influences urban agriculture in the successful case study cities, it is not the only contributor to success. Participants were asked what factors outside of planning they thought played a role in the proliferation of UA in their city, and whether or not they thought that these outside factors played a bigger role than planning efforts. It is important to emphasize that this is not an exhaustive list of all factors that can affect urban agriculture, but merely a representation of what planners believe have the greatest influence on UA. As planners are often quite involved in their community and tuned into community trends, they are in a good position to answer this question.

The most common outside factor was the presence of a “green ethic.” Having a population that places a high value on local food, sustainability, etc. plays a large part in determining the success of UA.

O1: *I think that we had...in...our urban population a lot of green thinking people.*

As discussed previously, most of the impetus for urban agriculture initiatives tends to come from the public, and municipalities with a large green-thinking population will see more push from the public to take an interest in food and UA. Additionally, a green ethic accompanied by a culture of community involvement can make a difference in support for UA. The participants from both Calgary and Ottawa mentioned that there has been a history of strong community involvement in their cities, and in certain neighbourhoods within the municipalities, and that this has played a role in impacting the success of UA.

Strongly related to the idea of a green ethic is the notion that the history and local context of a particular place also plays a part. Some areas have placed a high value on local food for a long time, or have rural families moving to the city who want to continue to grow their own food. Thus the idea of growing food is already engrained into the mindset of the population.

RD: *There is a strong farming context...people...have it in their blood.*

V2: *I think history is really important in Victoria... so we have a sort of history of agricultural uses right in our city.*

The participants from Victoria noted that the island nature of the city plays a role in that the population has always been more aware of where food comes from, how it gets transported to the island, and the carbon footprint associated with that. These responses indicate that often the “green ethic” of a community comes from its unique history.

In recent years topics such as climate change, peak oil, and sustainability have prompted people to take an interest in local food and urban agriculture as a possible solution to some of these problems. That, accompanied by the rise of a “hipster culture”

as one participant put it, has led to people becoming more interested in getting back to the land.

*RD: ...but then there's this resurgence of people who want to work with their hands again, get close to the land... wanting to do things the old way*

The fact that UA is quite trendy right now has the same kind of effect as the green ethic mentioned in the previous section. There is a high public demand for urban agriculture, which puts pressure on municipalities to respond. This supports what was found in the literature, specifically with regard to the New Food Equation (Morgan & Sonnino, 2010), which states that due to a variety of factors (already discussed in literature review) food issues have become more visible in the global north. The visibility of these food issues is a factor that has contributed to the rising interest in local food and urban agriculture.

The last main theme for the influence of outside factors is the interest and support of key individuals and groups. Some participants stated that a large reason for the city to get involved in UA issues is the interest of certain individual staff members who are pushing their agenda and wanting these issues to be addressed.

*RD: I think the biggest influence has been you know either councilors have been...a concern, dedicated money towards it and staff who have had an interest in it, making it available and promoting it.*

Tied to this is the interest of city councilors, and other political support for this topic.

There needs to be the support of people in power to actually be able to make an impact on urban agriculture in the community. The participants from Calgary noted that the ability to convince city council of the merits of local food work would make their job much easier in trying to get UA projects off the ground.

This concept is reflected in the literature on innovation adoption theory, where a “champion” (ex. CEO, opinion leader, top management, etc.) is positively associated with the pre-adoption and adoption of new innovations (Aarons et al. 2011; Feldstein and Glasgow 2008; Gallivan 2001; Meyer and Goes 1988; Solomons and Spross 2011; Valente 1996). Additionally, evidence of this can be seen in a Canadian study entitled *Municipal Food Policy Entrepreneurs*. The study looks at food policy initiatives in municipalities across the country, and finds that the role of champions is a key element in successful initiatives (MacRae & Donahue, 2013). The authors speculate that the value of these people comes from their skills in navigating the world of politics, and the advice they can provide (MacRae & Donahue, 2013). If people with influence can be convinced of the value of urban agriculture in their community, it would be a step in the right direction in terms of garnering municipal support for UA and getting the projects off the ground.

#### **4.6.1 Planning vs. outside factors**

When it comes to determining whether it is planning efforts or outside factors that have more of an effect on the level of UA, it is a two-step answer. Initially the outside factors play more of a role in the prominence of UA because of their influence on public attitudes. As discussed earlier, urban agriculture projects are generally initiated by the public as opposed to the by the municipality. People are interested in urban agriculture not because of a push by the city, but because of the other factors discussed in the preceding section. The one exception to this is in Kamloops, where the participant expressed the opinion that the planning efforts are playing a large role in generating an interest in UA.

*Ka1: I think that people know about the planning initiatives going on I think we've done some great education as far as raising awareness about the benefits of local of urban agriculture.*

Generally it is not the city that is trying to generate an interest, but is reacting to what the public wants. Once this has been established, then planning tools play a large role in determining how much UA can be allowed to proliferate. Specifically the zoning and by-laws as they have the most direct impact on the physical amount of UA. The official plans indirectly play a large role as well, because the zoning and bylaws have to comply with the vision set out in the OP.

#### **4.7 Summary**

In summary, the results of the UA inventory show that there is a wide variety of different types of UA present in Canadian cities. As a general rule, large cities have more UA than mid-sized ones, and the east and west coasts have more UA than other regions in Canada. Community gardens are the most prevalent form of urban agriculture, and vertical farms are the least popular.

The policy scan showed that all of the case study municipalities mention food or urban agriculture in at least one of their planning documents, however B.C., the west, and Ontario have more planning tools that address UA than Quebec and the east coast. Public interest prompts planners to include provisions and goals for food and UA in their plans, OPs and otherwise, but the zoning and bylaws are what really allow planners to make an impact in this regard.

There is a gap between the tools outlined in the literature review and the ones currently being used by planners. Although a strong connection to FPCs and presence of a land inventory correlates to a strong presence of UA (evidenced by the east coast and

B.C.) these are not the main ways in which planners engage with UA. This is generally done through traditional planning tools such as zoning, by-laws, and plans.

How can this discrepancy be explained? It is potentially the result of a disconnect between academia and planning practice (Alexander, 1997). The results show that the suggestions given in the academic literature as to how UA can be facilitated do in fact make a difference, however these methods are often not used by planners for practical reasons such as being too time- and cost-prohibitive. A better connection between academics and planners in the field would be beneficial for finding practical and realistic solutions as to the best way to impact urban agriculture.

Interviews with planners were conducted to gain more insight into how UA has been affected by these tools, policies and regulations. The general consensus is that, with some exceptions, they play more of a role in enabling UA than in actively encouraging it; usually the municipality will wait for the public to approach them about UA activities, and then incorporate the subject into various planning documents, as opposed to taking the initiative themselves.



## Chapter 5: Conclusions

The purpose of this research is to determine how planning impacts urban agriculture in Canada. The main research question is “How do planning tools, policies, and regulations influence urban agriculture in Canadian cities?” The first phase of research seeks to answer the following questions:

- What evidence of UA can be found in Canada?
  - What types of UA are being practiced?
  - Where are they present?

An inventory of urban agriculture from across Canada is conducted in order to answer these questions. The results of the inventory show that there are fourteen different types of UA that are evident in the cross section of cities sampled. Seven of them are taken from the planning literature; community gardens, green roofs/rooftop gardens, vertical farms, urban chickens, urban beekeeping, urban aquaculture, and small-scale farming. Community gardens are the most popular form of UA, as they are present in every city included in the inventory, and there are more of them per capita than any other type. Vertical farms are the scarcest UA type, only one having existed in Canada.

The rest are discovered through the inventory process and include gleaning, backyard sharing, grow-a-row programs, edible landscaping, guerilla gardening, urban orchards and food forests. Of these seven, gleaning, backyard sharing and grow-a-row programs are the most common types. Almost all of the large cities have one or more of these types of UA and regionally, they are more prevalent in British Columbia than anywhere else.

In terms of geographic distribution, the inventory indicates that there is more urban agriculture in large cities than in mid-sized ones. For each type of UA examined, it appears in a higher percentage of large cities than mid-sized. When looking at regional distribution, B.C. and the east coast show the highest concentration of UA, both in terms of per capita numbers and percentage of cities where it is evident.

The results of the UA inventory are used to select ten successful UA cities for a more in-depth analysis. A policy scan and interviews with planners are conducted for each of the chosen municipalities. This second phase of research seeks to answer the next set of research questions:

- What planning tools are being used to influence UA?
  - What impacts do the aforementioned planning tools have on UA?
- What are the other factors that have an effect on UA?
  - What level of impact do they have as compared to planning tools?

Based on the policy scan and interviews with planners, it is concluded that in most cases permissive zoning and by-laws are the tools that are being used by planners to influence UA. There are some exceptions, notably Kamloops, where the participant indicated that including goals related to food and UA in the social plan and a strong relationship with the FPC have been the biggest drivers behind the success of UA in recent years. Although many of the case study municipalities include food or UA in their official plans, and sometimes in other types of plans, for the most part the interview participants did not view these as having a significant impact as compared to zoning and by-laws.

Community garden policies also have a large impact on UA. Although not many of the case study municipalities have these types of policies, the ones that do exhibit high

numbers of community gardens. One of the reasons that these policies have a large influence is the fact that they give very specific and concrete guidelines regarding the establishment and operation of community gardens. These requirements can often be prohibitive to many groups wanting to establish a garden, thus these policies directly affect how successful gardens can be.

Factors outside planning that have a significant effect on urban agriculture include populations with a strong 'green ethic;' a resurgence in popularity of young people wanting to get back to the land; the local food history and context of each municipality; and the interest of key individuals and groups. In the majority of cases, these outside factors have more of an impact on the success of UA because they influence public attitudes towards it. Although this is the general trend, Kamloops is an exception where as presented in the interview findings, planning efforts do have more of an influence on UA, and the planning department is actively trying to raise awareness. Planning tools play a larger role in determining where and how much UA can be present in a city, because they govern the physical environment.

## **5.1 Contribution**

This research contributes to the body of literature on planning and urban agriculture in several ways. First, it serves to provide some insight into UA in a Canadian context. Most of the research on UA has been conducted in the developing world. In the North American literature, it is primarily cities in the United States, rather than Canada, that are being examined. This project provides an overview of the state of UA in Canada, which can be used a starting point for future research in the Canadian context.

In the small body of literature that deals with planning and UA in Canada, most of the research focuses on major cities such as Toronto and Vancouver, and, to a lesser extent, Montreal. There has not been, however, much research at all on municipalities outside of the major centres, or on mid-sized cities. This project seeks to fill this gap by examining all of the large cities in the country, as well the majority of the mid-sized ones.

Historically, food has not been associated with urban planning, and it is only recently that matters relating to food have started to come under the purview of planners. Because of this, there is a lack of understanding as to how planning can influence urban agriculture in the most effective way. This study looks at different planning tools to determine what kind of effect they have on UA, and provides recommendations as to the best ways for planners to facilitate UA in their community.

## **5.2 Limitations**

One of the major limitations of this research is the difficulty of finding information for the UA inventory. Some types of UA are easy to find information on using the internet. Community gardens, for example, are often well-publicized, have their own website, or are part of a community garden network. They are for public use and there are usually community gardens on city-owned land, making them easy to locate. Other types of UA, however, can be more difficult to find information on, making the inventory numbers only approximations. Therefore only a general impression about the level of UA in city can be known, as opposed to exhaustive statistics.

Additionally, although the inventory can provide a snapshot of the state of UA in Canada at a certain moment in time, the numbers are always changing as food issues continue to rise in popularity and more UA projects are established. For example, just

during the course of this research, the city of Red Deer changed their by-law to allow urban chickens, and Halifax established a strong relationship with the local food policy council. Therefore the information collected in this inventory may only be relevant for a short period of time.

One of the goals of the case studies was to interview a planner from each of the ten chosen municipalities. Only seven interviews, however, were actually conducted due to either lack of response, or the inability to establish contact. As a result, no interviews were conducted from the cities in Quebec, making it difficult to gain a deeper insight and come to conclusions about the state of UA in that province.

Another technical limitation regarding Quebec is the language barrier on the part of the researcher. The inability to fluently speak French makes it difficult to give the same depth of exploration and understanding as the rest of the municipalities.

## **5.3 Recommendations**

### **5.3.1 Recommendations for Practice**

Some of the literature related to UA and planning indicates that food is a relatively new topic that planners are engaging with, as traditionally they have not considered food to be within their purview. None of the planners interviewed for this research, however, expressed this opinion. All of them were knowledgeable about and involved with food and UA in their city. If this attitude could be adopted in municipalities where UA has not yet taken off, it would go a long way towards initiating positive action with regard to urban agriculture.

The first and simplest recommendation to planners is to make their zoning and by-laws more permissive when it comes to UA. Strategies such as allowing community

gardens in all land-use designations, easing restrictions on commercial urban agriculture, and modifying animal control by-laws to allow for the keeping of urban chickens and bees would all help to make the urban environment more conducive to UA.

On a similar note, the majority of the case study municipalities mentioned food or urban agriculture in their official plans, and this would be a beneficial step to take for other cities as well. Although zoning and by-laws are the tools that have the biggest influence on UA, they must comply with the official plan. If food is included in the OP, then modifying the by-laws is a logical next step.

To determine whether or not the inclusion of UA in plans and by-laws is having the desired effect, it would be beneficial for planners to monitor indicators related to UA. This way they can evaluate the success of these measures and modify them accordingly. Some of the case study municipalities already monitor indicators such as the number of community gardens, but there are many more options for what can be monitored, depending on the motivations of the city. For example, if UA is valued because of its contribution to local economic development, indicators could include the total dollar value of food produced, or the total revenue generated from food sales. If improving access to healthy food is the goal, indicators could include the amount of food produced, or the number of low-income shares in CSAs (community supported agriculture). Five Borough Farm, an urban agriculture project in New York City, offers an extensive indicator guide that could greatly aid municipalities to this end (Five Borough Farm, 2015).

Another recommendation for planners wishing to promote UA is to focus on public engagement specifically targeted to issues of food and urban agriculture. Many

planners indicated in the interviews that there is often public engagement, however targeting it specifically towards UA, and including the appropriate stakeholders, would allow for planners to understand exactly what the public wants in this regard and can put their resources to the best use. Some participants talked about initiatives that were proactively started by the city, but in the end were not successful. These types of situations can be avoided if planners know exactly what the public wants in terms of urban agriculture in their city.

Cultivating a close relationship with the local food policy council is another way in which planners can affect UA. Food policy councils are usually made up of different individuals and organizations that are passionate and knowledgeable about food and the local food environment. This makes them an excellent resource for knowing what the community wants and needs, and planners can utilize this to more effectively decide how to facilitate UA.

Lastly, if municipalities took more of an initiative to anticipate future problems when addressing food and urban agriculture, their policies could be much more effective. For example, the participant from Kingston discussed some of the difficulties surrounding the set up and operation of a community garden, which include water access, waste removal, parking, etc. If issues like these could be anticipated, then the city could take mitigation and prevention measures to ensure that their policies are more effective.

### **5.3.2 Recommendations for Further Research**

This research focuses on how planning tools, regulations and policies have an effect on urban agriculture in Canada right now. For the most part, they play an enabling role. There is however, a desire for that to shift to more of an encouraging role; this

opinion was voiced not only in the interviews but a survey conducted by Caldwell (2010) indicates that planners desire a significant/top priority role in community gardens and other urban agriculture projects. This study makes some recommendations as to how planners can impact UA, but further research could be done to determine the most effective way for planners to proactively encourage UA. This brings into question the role of planners in general. Should planners continue to play a passive role and wait for the public to come to them, or take on a more active role? Is this role of planner as visionary even necessary?

The inventory portion of this research gives a snapshot of the state of UA across Canada and concludes that UA is more successful on the east and west coasts (when comparing regionally) and in large, rather than mid-sized, cities. Some potential reasons for this distribution are suggested, but more in-depth exploration of the specific conditions of each region would be beneficial for determining how best to facilitate urban agriculture in specific areas, and in smaller cities. For example, the conditions that foster successful UA on the west coast may be different from what works in Quebec or Ontario.

A factor that may have an influence on distribution is the presence of immigrant communities. Often immigrant communities are assumed to participate more heavily in urban agriculture, but is there any evidence of this in reality? Do municipalities with high immigrant populations have more UA? And if not, which segments of society are participating in UA? Often urban agriculture initiatives are targeted towards low-income communities, but much of the time UA seems to be more of a middle class activity. Research into how best to involve the target communities would be beneficial in encouraging the spread of urban agriculture.



Lastly, is there any relationship between density and urban agriculture? For example, is there more of a need for regulation in large, dense cities as opposed to other municipalities with more single-family home? Are people more likely to conduct urban agricultural activities in their own backyard when they have the space for it? In cases like these, there may not be as much of a need for regulations and the involvement of planners.

As concerns over food issues in the developed world continue to grow, municipal decision-makers and planners must learn to adapt to these changing attitudes. This thesis provides insight into the relationship between urban planning and urban agriculture, in the hopes that planners can learn from the successes found around the country and incorporate them into their own planning agendas.

## Appendices

### Appendix A: Study Mid-Sized Cities

Study Mid-sized Cities					
City	Population	City	Population	City	Population
Grande Prairie	55032	Moncton	69074	Vaughan	288301
Lethbridge	83517	Ajax	109600	Waterloo	98780
Medicine Hat	60005	Aurora	53203	Welland	50631
Red Deer	90564	Barrie	135711	Whitby	122022
St. Albert	61466	Brantford	93650	Windsor	210891
Wood Buffalo (Fort McMurray)	65565	Burlington	175779	Blainville	53510
Abbotsford	133497	Cambridge	126748	Brossard	79273
Burnaby	223218	Guelph	121688	Drummondville	71852
Chilliwack	77936	Kingston	123363	Granby	63433
Coquitlam	126456	Kitchener	219153	Laval	401553
Delta	99863	London	366151	Levis	138769
Kamloops	85678	Markham	301709	Repentigny	82000
Langley	104177	Newmarket	79978	Saguenay	144746
Maple Ridge	76052	Niagara Falls	82997	Saint-Hyacinthe	53236
Nanaimo	83810	North Bay	53651	Saint-Jean-sur-Richelieu	92394
New Westminister	65976	Oakville	182520	Saint-Jerome	68456
North Vancouver	84412	Oshawa	149607	Shawinigan	50060
Richmond	190473	Peterborough	78698	Sherbrooke	154601
Saanich	109752	Pickering	88721	Terrebonne	106322
Surrey	468251	Sault Ste Marie	75141	Trois-Rivieres	131338
Victoria	80017	St. Catharines	131400	Regina	193100
Fredericton	56224	Sudbury	160274		

Alberta	Ontario
British Columbia	Quebec
New Brunswick	Saskatchewan

## Appendix B: Mid-Sized Cities Excluded from UA Inventory

Mid-Sized Cities Excluded from UA Inventory	
City	Population
Strathcona County	92490
Prince George	71974
Kelowna	117312
Port Coquitlam	56342
Cape Breton	97398
Richmond Hill	185541
Sarnia	72366
Thunder Bay	108359
Chatham-Kent	103671
Milton	84362
Norfolk County	63175
Clarington	84548
Kawartha Lakes	73214
Caledon	59460
Halton Hills	59008
Longueuil	231409
Gatineau	265349

Alberta
British Columbia
Nova Scotia
Ontario
Quebec

## Appendix C: Inventory Search Terms

1. City name + community garden network
2. City name + community gardens
3. City name + green roof
4. City name + food-producing green roof
5. City name + rooftop garden
6. City name + vertical farm
7. City name + urban chickens
8. City name + urban beekeeping
9. City name + urban aquaculture
10. City name + urban agriculture
11. City name + urban farming

1. City name + reseau jardin communautaire
2. City name + jardins communautaires
3. City name + toits verts
4. City name + toits jardins
5. City name + ferme vertical
6. City name + poules urbaines
7. City name + apiculture urbaine
8. City name + aquaculture urbaine
9. City name + agriculture urbaine
10. City name + ferme urbaine

## Appendix D: Information Letter

Dear \_\_\_\_\_,

\_\_\_\_\_ Date \_\_\_\_\_

This letter is an invitation to consider participating in a study I am conducting under the supervision of Dr. Clarence Woudsma, Director of the School of Planning. I am interested in increasing our understanding of how planning tools and policies affect urban agriculture in municipalities across Canada. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

The purpose of this study is to increase our understanding of how exactly urban planning has an affect on the success of urban agriculture in Canadian cities. Access to healthy and affordable food is becoming a global issue due to problems such as climate change, peak oil, population growth, and loss of productive farmland. Producing food within cities is one strategy that is being used to combat this issue, and it is important to understand exactly what role planners can play in fostering the growth of urban agriculture.

The study will focus on understanding how planning departments currently use the tools available to them to influence the development of urban agriculture. The planning tools of municipalities that have a thriving urban agriculture community will be examined to ascertain how much of role they have played in contributing to this success. Your participation in this study will certainly provide a deeper level of insight and enrich the quality and reliability of knowledge available to municipal governments that wish to actively support and foster urban agriculture. I believe that you are best suited to speak to the various items outlined above because of your involvement in the planning department and knowledge of it's food system strategies.

Participation in this study is voluntary. It will involve an interview of approximately 60 minutes in length to take place over the phone or on Skype™. Skype™ is a United States of America company. Consequently, USA authorities under provisions of the Patriot Act may access data or meta-data related to these communications. If you prefer not to talk via Skype, please contact one of the researchers so you can participate using an alternative method such as through the telephone. You may decline to answer any of the survey or interview questions if you so wish. Further, you may decide to withdraw from this study at any time without any negative consequences by advising me. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish. All information you provide is considered completely confidential. If you wish, your name will not appear in any report resulting from this study; however, with your permission anonymous quotations may be used. The interview recordings will be destroyed after 1 year. There are no known or anticipated risks to you as a participant in this study.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at **226-808-7476** or by email at **[dsoderho@uwaterloo.ca](mailto:dsoderho@uwaterloo.ca)**. This study is being undertaken as part of a Master's Thesis under the supervision of Dr. Clarence Woudsma, who can be reached at **519-888-4567 ext 33662** or by email at **[cwoudsma@uwaterloo.ca](mailto:cwoudsma@uwaterloo.ca)**.

I would like to assure you that this project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation is yours. Participants who have concerns or questions about their involvement in the project may contact the Chief Ethics Officer, Office of Research Ethics at 519-888-4567, Ext. 36005 or [maureen.nummelin@uwaterloo.ca](mailto:maureen.nummelin@uwaterloo.ca).

I believe that ultimately, greater knowledge about how planners can influence urban agriculture in their city will benefit not only municipalities, but the greater community as well. As a participant in this study, you and your company will receive a copy of the findings of this study when the study is complete.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely

Danielle Soderholm, MA Candidate  
Student Investigator

## Appendix E: Consent Form

I have read the information presented in the information letter about a study being conducted by Danielle Soderholm of the School of Planning at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in report to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Chief Ethics Officer, Office of Research Ethics at 519-888-4567 ext. 36005 or [maureen.nummelin@uwaterloo.ca](mailto:maureen.nummelin@uwaterloo.ca).

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

YES    NO

I agree to have my interview audio recorded.

YES    NO

I agree to the use of anonymous quotations in any report that comes of this research.

YES    NO

Participant Name: \_\_\_\_\_ (Please print)

Participant Signature: \_\_\_\_\_

Witness Name: \_\_\_\_\_ (Please print)

Witness Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Appendix F: Interview Guide**

### *Section 1*

Participants will first be questioned to about the specific ways in which their municipality is trying to influence urban agriculture. Questions include:

- How would you characterize urban agriculture in your community?
- Is the planning department actively trying to encourage urban agriculture initiatives?
  - In what way?
  - How are you engaging the public in these initiatives?
- Are planners involved with the food policy council (if one exists)?
  - How do you interact with the FPC?
  - Does the FPC play an active role in influencing urban agriculture?
- Has the planning department conducted an urban agriculture land inventory? Why or why not?
  - Are there plans to?
- With regard to urban agriculture, would you consider your zoning and other bylaws (ex. animal control bylaw) permissive or restrictive? What would be your best examples?

### *Section 2*

The next theme involves questions pertaining to how the above strategies have had an effect on the level of UA. Questions include:

- What policy and regulation changes related to urban agriculture in recent years have had the most impact (positive or negative) in your opinion?
- Do you have any strategic goals related to urban agriculture as a community?
- Do you monitor any urban agriculture indicators? If so, what are they?
- Are there any other planning tools/policies in your community that you consider a barrier to urban agriculture? If so, explain.
- Are you considering removing these barriers or adopting other tools or policies to increase the level of urban agriculture?

### *Section 3*

The last interview theme deals with factors not related to planning that may also have influenced the success of urban agriculture. The following questions will be discussed:

- Thinking outside of planning, what are other factors that are an influence on the level of urban agriculture activity in your community?
- Do you think that these outside factors have had more of an influence on the level of urban agriculture as compared to planning efforts? Why or why not?



## **Appendix G: Kamloops Policy Review**

### **KAMPLAN: Official Community Plan**

- 5.0 Social Planning
  - 5.2.6 Consider the use of city parks, school yards, rights of way, surplus properties and redevelopment parcels at least in part for food production and distribution
  - 5.2.7 encourage initiatives aimed at local food self-reliance such as community kitchens and community gardens
  - 5.2.10 Continue to promote agriculture in all schools, with emphasis on food production in the local region and school gardens to train children in growing skills and provide food for school meals

### **Kamloops Social Plan**

- 2.5.3 Food Security – Emergency Food and Food Production Capacity: Recommendations
  - Continue to support Kamloops Food Policy Council
  - Support initiatives that contribute to the enhancement of conditions for urban agriculture
    - Recognize gardens as a universally accepted land use
    - Amend multifamily regulations to include landscaping for food production
    - Encourage new buildings to incorporate gardening opportunities in their green space (e.g. roof top gardens and edible landscapes)
    - Consider urban gardens as a condition for density bonusing
    - Prepare an inventory of community garden and community kitchen resources in the City

### **Community Food Action Initiative: Project Overview and Kamloops Food Action Plan**

- Community Food Action Initiative involved 5 elements:
  - Inventory of resources and food action projects
  - Community consultations and policy review
  - Food action forum to review policy and develop actions
  - Draft plan
  - Evaluation using food security report card
- Recommendations for participating in plan implementation: City of Kamloops
  - Ongoing support for Kamloops Food Policy Council
  - Building connections between economic development groups and agriculture and food organizations and businesses to enhance agriculture and food sectors in the Kamloops region
  - Raising awareness and understanding of local agriculture and food issues and opportunities
  - Development of policies and guidelines for urban food producing gardens

### **Agricultural Area Plan (2013)**

- Issue Identification Table
  - 21. Improving the urban agriculture interface (high priority)
- Strategy 1: Municipal Government to Play a Greater Role in Local Agriculture, Preservation, Enhancement, and Promotion Through Land Use Planning, Bylaws, Policies, and Programs – Recommended Actions
  - 3. Develop an urban agriculture plan/community-wide food strategy
    - Investigate policies such as urban hens, urban bee keeping, spin farming, community gardens, public produce, temporary use permits for underutilized/vacant land, edible street trees
  - 21. Appoint a permanent Kamloops AAC that could provide input on tasks as they pertain to local agriculture
    - Urban agriculture/food security reviews – provide input on projects pertaining to urban agriculture/food security as needed

### **Sustainable Kamloops Plan: Foundations for Sustainability**

- Land: How will we achieve success?
  - Promoting local food security:
    - Encouraging use of edible landscapes
    - Reviewing potential for seniors with large yards to make garden areas available to other member of the community who do not have access to land
    - Establishing more community gardens
- Food security – How will we achieve success?
  - Working with developers to encourage the integration of community gardens into new multi-family developments
  - Considering development of a local food strategy
  - Pursuing opportunities to use City landscapes and undeveloped areas [...] for growing food
  - Helping facilitate expansion of the Food Share program
  - Encouraging the development of a yard/garden share program

### **City of Kamloops Sustainable Kamloops Plan: Information Package on Food Security**

- Goals:
  - Ensure that people have access to nutritious food
  - Promote the growing of an abundance of food locally [...]
  - Recognize the values provided by community gardens as places for people to congregate and build social networks;
  - Help foster the growth of the local food economy
  - Ensure that people who want to grow some of their own food are able to do so
- Targets
  - Work with developers to encourage the integration of community gardens into new multi-family developments

- Pursue opportunities to use City landscapes and undeveloped areas for growing food
- Achieve 4-5 community garden plots per 1000 residents

**Animal Control Bylaw NO. 34-11**

- 9.1. No person shall keep more than the number of head of poultry on any parcel of land in the City than as provided in the following table:

Parcel of Land (Area)	Maximum Poultry Permitted
over 0.4047 ha (one acre)	30 head

- (a) No rooster shall be kept in any residential zone.
- 12.1. No person shall keep or harbour bees on any parcel of land unless
  - (a) The parcel of land is located in one of the following:
    - Zone Areas A-1, FD, CR-1, CR-2, CR-3, RS-1, RS-2, RS-2A, RS-3, RS-4, RS-5, RT-1, RT-2, or RT-3
    - Zone Areas P-1, P-2, P-3, P-4, or P-8 and associated with a community garden or educational program; or
    - As specifically permitted by the City of Kamloops Zoning Bylaw on individual lots.

**Bylaw NO. 5-1-2001 Zoning Bylaw of the City of Kamloops**

- Division Fourteen A – P-8 (Post-Secondary Education)
  - 1402A The following uses as accessory or subordinate to the principal uses as provided in Section 1401A and no others, are permitted in the P-8 zone:
    - Agricultural use...

## Appendix H: Victoria Policy Review

### Official Plan

- Land Management and Development
  - 6.4 [...] Urban food production [...] permitted in all designations as determined in accordance with zoning
- Parks and Recreation
  - 9.7.3: piloting green infrastructure and urban food production in greenways
- Environment
  - 10.22.1: promote household practices such as [...] food production
- Infrastructure
  - 11.10 Support and enable closed-loop systems for new and existing civic infrastructure, where waste is minimized and natural processes are integrated into systems and services that include....
    - 11.10.6 Urban food production
- Economy
  - 14.9 Support economic activities that use and strengthen community resources and the capacity of citizens to enhance social well-being, such as food production and processing, through enabling municipal regulations, and incentives, where appropriate
- Section 17: Food Systems
  - Goals:
    - 17(A) A healthy share of the food that supplies Victoria's daily needs is sustainability grown, processed and packaged in the city, in surrounding agriculture areas, and on Vancouver island
    - 17(B) Victorians have access to skills, knowledge and resources to produce and process their own food in urban areas
  - Broad objectives:
    - 17(A) planning for the food system is comprehensive and integrated at various scales
    - 17(B) the opportunity for urban food production is increased on public and private lands
  - Comprehensive Food system planning
    - 17.1 Participate in coordinated community and regional efforts to a develop a more sustainable food system [...]
    - 17.2 Advocate to the Capital Regional District to develop a regional food system strategy that enhances urban and rural food production [...]
  - Urban Food Production
    - 17.4 Review and develop city policy to increase number of community/allotment gardens, fruit trees, edible landscapes, and other food production activities [...]
  - Food Production on private land
    - 17.10 Support food production on private land [...]

- 17.11 Encourage the provision of gardens and other food production spaces for the use of residents in new multi-unit housing
- 17.12 Develop voluntary guidelines for food production for food production in multi-unit, mixed-use developments and other types of housing
- 17.13 Support the keeping of small livestock in the city
- 17.14 Explore expanded small-scale commercial urban agriculture through a review of policy and regulations [...]

### **A Three Year Sustainability Action Plan 2012-2015**

- Collaborative research program will keep Victoria on the cutting edge by exploring emerging trends and municipal best practices in areas such as eco-districts, incentives for green infrastructure and food systems

### **Community Gardens Policy**

- Goals:
  - To recognize the need for community gardens
  - To establish community gardens throughout city on public and private lands, where feasible
  - To recognize the value of community gardens, as a public amenity, in land use redevelopment
  - To encourage backyard, rooftop and workplace gardening [...]
  - To maintain existing community gardens and protect local food production
- City Support for Community Gardens:
  - Promote and raise awareness
  - Provide contact information for existing community garden organizations
  - Offer Victoria-owned land for new community garden sites
  - Identify City's community garden contacts
  - Assess site suitability
  - Provide Community and Neighbourhood Associations with funds to start up and develop community gardens
  - Provide in-kind support
- Guidelines for Selecting New Sites on Public Property
- Retention of existing sites – establishing new gardens is a challenge due to lack of undeveloped land
- Conditions of Use on City-Owned Property
- Conditions for Use on Park Land

### **NO. 11-044 Animal Control Bylaw**

- 21. (1) A person who keeps bees must
  - (a) provide adequate water for the bees on the person's property
  - (b) maintain the bees in a condition that will reasonably prevent swarming, and

- (c) keep hives at least 7.6m away from each property line, unless there is a solid fence or hedge at least 1.8m tall parallel to the property line

**Animal Control Services: Backyard Chickens**

- “In Victoria it is lawful to keep hens. Roosters are prohibited. There is no maximum number of hens allowed, but the number must be consistent with use for personal egg consumption”
- <http://www.vacs.ca/bylaw-regulations/backyard-chickens/register-your-chickens>

**Zoning Regulation By-law No. 80-159**

- Home Occupations
  - Permitted Uses 5: The following uses are permitted as home occupations:
    - (h) Urban agriculture, defined as the cultivation of a portion of a parcel for the production of fruits and vegetables

## **Appendix I: Calgary Policy Review**

### **Municipal Development Plan**

- 2.2.4 Complete Communities: Policies
  - vii) spaces for community gardens and local food production
- 2.6.1. Green Infrastructure: Policies
  - (b) Identify and protect strategic parcels, blocks, and corridors that [...] promote food production and composting [...]
- 3.6.2 Future Greenfield Area: Land Use Policies
  - (iv) Future greenfield areas should allow for local food production

### **Calgary Eats! Food System Assessment and Action Plan for Calgary**

- 4.4 Urban Agriculture in Calgary
  - Environment scan of Calgary's UA
  - Planning permit requirements for different forms of UA, Table 4.1
- 4.5 Challenges to Food Production in Calgary and the Region
  - 4.5.1 Climate
  - 4.5.2 The Global Food System
  - 4.5.3 Rising Costs of Inputs
  - 4.5.4 Development and Land Values
  - 4.5.5 Land Use Planning Policy
    - Food production systems have to compete with the land uses of a growing urban area
    - Land use plans have not in the past identified lands with significant agricultural value for protection – land of agricultural value is generally proposed for development rather than preserved
    - Agronomic analysis of the region is needed
  - 4.5.6 Bylaws and Legislation (affecting UA)
- 4.6 Potential Food Production Capacity in Calgary
  - Significant amount of city owned land could be temporarily used for food production
  - Land Inventory phase 1 = completed
    - Remove sites that would be inappropriate for UA
  - Land inventory phase 2 = future analysis
    - Phase 1 sites reviewed on case by case basis
  - Land Inventory Principles - to analyze city owned land in consideration of the potential for UA
    - Ownership
    - Size
    - Site function
    - Site access
    - Access to water
    - Site slope and access to light
    - Safety
    - Soil quality and contamination
    - Environmental impact

- Impact on neighbouring uses
- Table 4.4 – Production Summary
  - Planning and Land Use: Issues
    - Absence of binding federal and provincial legislation to protect agricultural land
    - Food production systems have not typically been a high priority item in land use designation
    - Data is currently unavailable [...] to determine the land mass required to support a percentage of demand through local supply
    - Food production and community gardens are less accessible to residents in affordable housing
  - Planning and Land Use: Opportunities
    - Implementation of the MDP will focus on strategic intensification which will reduce the need to annex further agriculture lands
    - Collaboration between Calgary Regional Partnership (CRP) and regional municipal districts on a vision for a sustainable food system
    - Growing interest in rooftop gardens
    - Phase 1 land inventory has identified land for food production
  - Planning and Land Use: Examples from Other Jurisdictions
    - Examples of organizations that conserve farmland
    - Community Development framework in Detroit incorporates food production as a major characteristic in some sectors
  - Planning and Land Use: Recommendations
    - Collaboration with CRP members to develop food policy
    - Collaborations between various offices to implement food vision, principles and strategies in local area plans, regional policy and growth management decisions.
    - Requirements for Subdivision, Outline Plans and Development permits to address agricultural land conservation and consider urban agriculture
    - Undertake Phase 2 of land inventory
    - Work with stakeholders to explore and support rooftop gardens for food production

**Bylaw Number 23M2006 – Regulation, Licensing and Control of Animals in the City of Calgary**

- 27. No person shall keep Livestock in any area of the City except where the keeping of Livestock is allowed under the City of Calgary Land Use Bylaw



## Appendix J: Red Deer Policy Review

### Environmental Master Plan

#### Section 3: How to Measure Progress

- Ecology
  - Man-Made Green Areas
    - Additional actions for consideration: encourage rooftop gardens and *living roofs*; consider incorporation of *living roofs* into all new City buildings
- Built Environment
  - Work with the community and developers to create a community garden stewardship initiative to facilitate the establishment and stewardship of additional community garden plots. Aim to introduce a new community garden each year for ten years.
- Community gardens and local food supply
  - Metric: the land devoted to community gardens and urban agriculture in area (m<sup>2</sup>) per capita
    - Baseline (2012): 0.4m<sup>2/cap</sup>
    - Targets: 2015 – 0.5 m<sup>2/cap</sup> 2020 – 0.75m<sup>2/cap</sup> 2035 – 1.5m<sup>2/cap</sup>
  - Additional actions for consideration:
    - 1. Create a year-round Farmer's Market
    - 2. Partner with the school boards and a third party [...] to develop school-ground greening programs, create outdoor classrooms and incorporate nature-based learning.
    - 3. Encourage developers to set aside a small amount of land beyond that required through planning bylaws for community garden purposes.

#### Progress and Potential: Red Deer's Greater Downtown Action Plan, 2008 update

- C. Commentary
  - 4. Social Environment (pg. 89-90)
    - In the GDAP 2000 there was a call for community garden plots downtown.
    - This is becoming increasingly interesting to citizens as more attention is paid to the role of food in local sustainability.
    - Sustainable Red Deer group is actively promoting community gardens and such initiatives should be actively encouraged.

#### By-law NO. 3517/2014 to regulate the keeping of chickens in urban areas

- 4. In an Urban Area, no person shall:
  - (a) keep a Rooster
  - (b) keep a Hen, other than an Urban Chicken for which a valid Chicken License has been issued
- 5. A person may apply to keep no more than (4) Urban Chickens

**City of Red Deer Land Use Bylaw 3357/2006**

- 3.25 Community Gardens
  - Community gardens are discretionary use in all districts and subject to approval by the Development Authority

## **Appendix K: Kingston Policy Review**

### **Kingston Official Plan**

- 2.9 Economic Development
  - 2.9.2 (c) promoting the increasing interest in organic farming and locally grown food
- 3.2 Community Facilities
  - Goal: provide social, cultural, educational or religious facilities that support the function and operation of many land uses in the city in locations that are convenient and compatible with adjacent land uses
    - 3.2.8 Community based initiatives such as community gardens, other forms of urban agriculture, and tree planting projects are permitted in all land use designation, subject to site by site evaluation

### **Sustainable Kingston Plan**

- Economic Pillar: Economic Health
  - Theme EC6: Agriculture, Goals
    - Raise appreciation of the importance of local food production...
    - Encourage and support local food production in developed areas
- Social Pillar: Social Equity
  - Theme SO3: Food and Nutrition, Goals
    - Establish a food policy council
    - Encourage development of urban agriculture and community gardens

### **Community Gardens Policy**

- 1.0: Purpose
  - The purpose of this policy is to establish guidelines for the development and operation of Community Gardens on municipally owned lands.
  - This policy establishes the City's role as facilitator and provides a framework to ensure equal access for all residents
- The policy outlines the features that a community garden may have; criteria for site selection; construction guidelines; operations information; conditions of use; and states the importance of the retention of existing sites.

### **By-Law NO. 2004-144: A By-Law to Regulate Animals**

- 4.13 No person shall keep livestock or poultry on any property except in a veterinary hospital clinic or as part of a cultural, recreational, or educational event, including a public or agricultural fair
  - 1.1 "poultry" includes game birds and roosters but does not include any bird sold as a household pet or a hen
- 4.17 (a) No person shall keep hens anywhere within the City unless he or hse has first obtained a hen coop permit
- 4.17 (h) A maximum of 6 hens will be allowed on any residential property.

### **City of Kingston By-law No. 8499 “Restricted Area (Zoning) By-law”**

- Section 24: General Provisions for the Industrial Zone “M1”
  - 24.2 The following uses only shall be permitted in M1 zones:
    - b) market gardens, horticultural nurseries or greenhouses if no retail stands or commercial structures are maintained in connection therewith
- Section 25: General Provisions for the Industrial Zone “M2”
  - 25.2 The following uses only shall be permitted in M2 zones:
    - b) market gardens, horticultural nurseries or greenhouses if no retail stands or commercial structures are maintained in connection therewith
- Section 35: General Provisions for the Public Open Space Zone “OS1”
  - 35.2 The following uses only shall be permitted in OS1 zones:
    - e) garden plots
- Section 36: General Provisions for the Private Open Space Zone “OS2”
  - 36.2 The following uses only shall be permitted in OS2 zones:
    - a) farms, market gardens, nurseries and green houses provided that no retail stand or commercial structure is maintained in connection therewith...

## **Appendix L: Ottawa Policy Review**

### **Official Plan**

- 2.4.5 - Greenspaces: “[Greenspaces] moderate climate and provide a place to grow food in community gardens.”
- Figure 2.5.6: Structure of Community Design Plans
  - G. Implementation Strategy
    - 8. Community based initiatives such as community reforestation, community gardens, business improvement areas or cooperative housing projects

### **Official Plan Amendment #150**

- 1.3 - Health: “Quality of life is supported by building: Community-based food production into urban areas, through edible landscapes, community gardens and small and mid-scale urban farms”
- 1.4 – Goal: Food and Agriculture: The local food system is sustainable and provides residents with healthy, affordable food.
- 2.1 (z) “The City will recognize the role of small and medium-scale food production in a sustainable food system and community-based food production will be integrated into urban and rural areas, through edible landscapes, community gardens, and small and mid-scale urban and rural farms, where possible and in keeping with City policy.”

## **A Plan for Sustainability and Resilience in Canada’s Capital Region**

### **Section 5.10: Support Local Food and Agriculture**

- Strategy 1: Protect agricultural land
  - Needs to be protected through planning regulations and municipal bylaws (ex. topsoil removal, dumping of foreign materials, etc.)
  - Widespread adoption of sustainable agriculture practices to reduce nitrogen and pesticides
- Strategy 2: Advance local food economies
  - Local food infrastructure (processing, distribution, storage) is needed to connect consumers and individual producers
  - Corporate commitments to buy local
  - Direct marketing initiatives (farmers markets, etc.)
- Strategy 3: Support new farmers
  - Allocating land for incubator and demonstration farms
  - Partnering with educational institutions
  - Bringing food and agriculture into every level of education
- Strategy 4: Celebrate food
  - Designing public spaces with community gathering space in mind
- Strategy 5: Grow and process food in villages and the urban area
  - Allocating public land for community gardens
  - Requiring small plots or rooftop gardens in new developments
- Strategy 6: Make sure everyone has enough nutritious food to eat
- Strategy 7: Increase food system efficiencies

- Farmer-to-farmer outreach and education programs for reducing fossil fuel consumption

### **Community Garden Action Plan (2004)**

- 1. Identification and access to community garden space
  - a) Ensure that the City's Comprehensive Zoning By-law includes community gardens as permitted use in all land use zones [...]
  - b) Collaborate with the Community Garden Network (CGN) [...]
  - c) Establish a process to identify City-owned land appropriate for community gardens.
  - d) Implement a standardized license of occupation used for community gardens on City land.
- 2. Supporting Capacity Development Action
  - a) Provide liaison function [...] for community garden development
  - b) Assist community garden groups [...] to access sponsors and alternate funding sources
- 3. Provision of Operational Support Action
  - a) Establish an annual garden development fund
- 4. Monitoring and Evaluation of the Proposed Model Action

### **Report to Community and Protective Services Committee and Council Community Garden Action Plan Evaluation**

- Identification
  - Community gardens are permitted in most zones
  - Process to identify surplus city land has worked well in suburban areas
  - In urban areas where land is scarce, the city has sought out parks
- Supporting capacity development
  - Liaison function was assigned
  - Community funding allocates an annual amount of \$46 549 to the community garden network
- Operational support
  - Annual start up fund of \$5000 is now inadequate
  - In 2008, \$75 000 redirected to community garden action plan
  - Collaborate to provide water where it is not easily accessible

### **By-law Number 2003-77: A by-law of the City of Ottawa respecting animal care and control**

- 74. (1) No person shall keep livestock in any are of the City unless the area is zoned for that purpose or is lawfully used for that purpose
- "livestock" means any domestic fowl (including chickens, geese, ducks, turkeys, guinea fowl, etc.), horse, donkey, mule, bull, ox, cow or other cattle, goat, swine, sheep, llama, mink, fox, emu or ostrich, or the young thereof; (By-law 2004-489)

## City of Ottawa Zoning Bylaw

- Sec. 82 Community Garden
  - (1) Where permitted, a community garden must comply with the following provisions:
    - (a) it is not a commercial operation
    - (b) the produce grown is for the personal use and consumption of the individual working the community garden, and
    - (c) no vehicle, equipment, building. Or structure of any sort, including an arbour or other such supporting structure, is permitted within 1.5 metres of a public street.
  - (2) No parking is required for a community garden
  - (3) Despite subsection (2), where vehicular gardening equipment or a personal vehicle, including a passenger vehicle, is used in conjunction with a community garden, that gardening equipment and that personal vehicle must be parked on the same lot as the community garden.
- Community gardens are permitted in zones L1, L2, L3, O1, R1, R2, R3, R4, R5, RM, I1, I2, AM, AM5 Subzone, GM (2,3,4,5,13,18, 25,29), LC (1-8), MC, MD, TM

## **Appendix M: Saguenay Policy Review**

### **Plan d'urbanisme (Official Plan)**

- No mention of food or agriculture

### **Reglement VS-R-2007-50 Concernant les animaux sur le territoire de le ville de Saguenay (Animal Control Bylaw)**

- Chickens are not mentioned in the list of birds allowed in the City
- No mention of bees

### **Ville de Saguenay Reglement de zonage – VS-R-2012-3**

- Article 120 Usages
  - (7721) Jardin communautaire
    - Espace de terrain destiné à exercer des activités reliées à des cultures utilitaires. Ce type de jardin est parfois bordé d'arbres et de gazon.



## **Appendix N: Montreal Policy Review**

### **Montréal Master Plan**

- 2.1 High- quality, diversified and complete living environments
  - Montreal, A Healthy City
    - Its objectives translate into a series of actions dealing with education, employment, urban spaces and community and social programs, such as those which combat food security: community gardens, co-ops, purchasing groups, community kitchens, meals-on-wheels services and school lunches (text box, p.14)
- 2.5 High-quality architecture and urban landscapes
  - Action 11.3 Preserve and improve Montreal’s green network
    - Ensure the greening of living environments through: Regulatory measures favouring green spaces and the planting of trees as part of new real estate developments, in front yards, backyards, courtyards, rooftops, etc.
  - Action 12.1 Promote quality architecture that is ecologically sound and respectful of Montreal’s character
    - Develop and implement incentives to encourage the integration of energy-efficient methods and environmentally-sensitive architectural innovations, such as green roofs, in new construction or renovation projects
    - Building green roofs: Possible use as green spaces for relaxation or urban agriculture (text box, p.133)
- 2.7 A Healthy Environment
  - Overhead power lines: As a general rule, the rights-of-way for lines carrying 735 kV or less can be used for gardening and horticulture

### **Montréal for Tomorrow: Draft Montréal Development Plan**

- Development Principles
  - A city of design that highlights its architecture, creativity, heritage, urban landscapes and natural environments in addition to promoting urban agriculture

### **Arrondissement d’Anjou Règlement RCA 95 Règlement sur le contrôle des animaux**

- Section VIII Animaux Interdits
  - 31. Sauf dans un secteur du territoire où un tel usage est autorisé selon le règlement d’urbanisme de l’arrondissement, il est interdit à toute personne de garder en captivité à quelque fin que ce soit, dans ou sur une unité d’occupation, un animal ne faisant pas partie d’une des espèces suivantes :
    - 8° les oiseaux, à l’exception...de la poule...

### **Arrondissement de L’Île-Bizard–Sainte-Geneviève Règlement Numéro CA28 0035 Règlement sur le contrôle des animaux**

- Section VIII Animaux permis
  - 8° les oiseaux, à l’exception...de la poule...

**Arrondissement de Mercier-Hochelaga-Maisonneuve Règlement RCA13-27003**

- Section IX Animaux permis
  - 8° les oiseaux, à l'exception...de la poule...

**Arrondissement de Pierrefonds-Roxboro Règlement CA29 0068 sur le contrôle des animaux**

- Section VIII Animaux permis
  - 8° les oiseaux, à l'exception...de la poule...

**Arrondissement de Saint-Laurent Règlement numéro RCA13-08-4 sur le contrôle des animaux**

- Section VIII Animaux permis
  - 8° les oiseaux, à l'exception...de la poule...

**Arrondissement de Saint-Léonard Règlement numéro 2194 Règlement sur le contrôle des animaux**

- Section VIII Animaux permis
  - 8° les oiseaux, à l'exception...de la poule...

**Arrondissement de Ville-Marie Règlement CA-24-191 Règlement sur le contrôle des animaux (codification administrative)**

- Section VIII Animaux permis
  - 8° les oiseaux, à l'exception...de la poule...

**Règlement 01274: Règlement d'urbanisme de l'arrondissement Ahuntsic-Cartierville**

- Chapitre VI, Section I Espaces et lieux publics – Catégories E.1(1) à E.1(4)
  - 299. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.

**Règlement de l'urbanisme de l'arrondissement de Côte-des-Neiges – Notre-Dame-de-Grace (01-276) (Codification administrative)**

- Chapitre VI Sous-section 2 Usages autorisées dans les catégories E.1(1) à E.1(4)
  - 292. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.

**Règlement de zonage numéro 2098 (LaSalle)**

- 4.4.2 Communautaire récréation extensive
  - 4.4.2.1 Les usages permis
    - c) un jardin communautaire

### **Règlement 01-277 Règlement d'urbanisme de l'arrondissement Plateau-Mont-Royal**

- Chapitre VI, Sous-section 2 Usages autorisées dans les catégories E.1(1) à E.1(4)
  - 304. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.

### **Règlement d'urbanisme de l'arrondissement du Sud-Ouest**

- Chapitre VI Sous-section 2 Usages autorisées dans les catégories E.1(1) à E.1(4)
  - 306. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.

### **Arrondissement de L'Île-Bizard–Sainte-Geneviève Règlement numéro CA28 0023 Règlement de Zonage**

- Sous-section IV Groupe « Agriculture »
  - 36. La classe d'usages « A1 Culture et élevage » permet les usages suivants:
    - 1° culture de céréales, de fruits et de légumes;
    - 2° production laitière;
    - 3° élevage d'animaux de ferme, à l'exclusion d'élevage de porcs;
    - 4° terrain de pâture et de pacage;
    - 5° serre, spécialité de l'horticulture et de la floriculture
    - 6° rucher;
    - 7° érablière;
    - 8° pépinière;
    - 9° pisciculture
    - 10° reproduction du gibier
- Sous-section II Vente de produits agricoles
  - 383. La vente de produits agricoles est autorisée à titre d'usage complémentaire à toutes les classes d'usages du groupe « Agriculture ».

### **Règlement d'Urbanisme de l'Arrondissement Mercier/Hochelaga Maisonneuve (01-275)**

- Chapitre VI Sous-section 2 Usages autorisées dans les catégories E.1(1) à E.1(4)
  - 290. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.

### **Zoning By-law: By-law number CA29 0040 (Pierrefonds-Roxboro)**

- Chapter 4: Provisions Relative to the Classification of Main Land Uses
  - 58. Uses authorized in all zones
    - 13° Community garden (7631);

## Règlement de zonage de l'arrondissement de Rivière-des-Prairies–Pointe-aux-Trembles RCA09-Z01

ARTICLE 71 TABLEAU DES USAGES PRINCIPAUX ASSOCIÉS AUX CLASSES D'USAGES

Classes d'usages		Habitation unifamiliale	Habitation bifamiliale	Habitation trifamiliale	Habitation multifamiliale	Habitation collective	Commerce et service de voisinage	Commerce et service arériel	Commerce et service de grande superficie	Commerce et service lourd	Hébergement hôtelier	Bar et débit de boissons	Salle de réception, de danse ou de spectacle	Salle d'amusement, commerce de prêt sur gage et établissement exploitant férolisme	Poste d'essence	Détailant de véhicules automobiles et de pièces de rechange	Commerce et service de réparation de véhicules automobiles	Institutions locales	Grands équipements institutionnels	Couvent, monastère et lieu de culte	Parcs et espaces verts	Conservation	Utilité publique	Industrie légère	Industrie moyenne	Industrie lourde	Entreposage extérieur	Extraction	Mise en valeur des matières résiduelles	Gestion et élimination des matières résiduelles
No	Usage principal	H.1	H.2	H.3	H.4	H.5	C.1	C.2	C.3	C.4	C.5	C.6	C.7	C.8	C.9	C.10	C.11	P.1	P.2	P.3	P.4	P.5	P.6	I.1	I.2	I.3	I.4	I.5	I.6	I.7
143	Jardin botanique																													
144	Jardin communautaire																													
145	Jouets et jeux																													

## Règlement de zonage de l'arrondissement Rosemont-Petite-Patrie (Codification Administrative)

- Chapitre VI Sous-section 2 Usages autorisées dans les catégories E.1(1) à E.1(4)
  - 290. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.
- 674.7 Objectifs et critères applicables à la zone 0637 (Village olympique)
  - C) Objectifs et critères applicables à l'implantation des constructions
    - Tendre à minimiser l'impact sur l'ensoleillement du boisé, du massif de conifères, du jardin communautaire, du golf et des bâtiments entre eux, par la disposition sur le terrain et la volumétrie des bâtiments;

## Codification Administrative: Règlement numéro RCA08-08-0001 sur le zonage (L'Arrondissement Saint-Laurent)

- 2.1.4.1 Parc (p1)
  - 1° 3011 Parc : usage dont l'activité principale est d'offrir à la population des espaces extérieurs paysagers ou de verdure à des fins récréatives, de loisirs, de détente, de sports ou de jeux.
    - 02 jardin communautaire

## Codification Administrative de règlement d'urbanisme de l'arrondissement de Ville-Marie 01-282

- Community gardens are permitted in zones R.2, R.3, M.1, M.2, M.3, M.4, M.5, M.6, M.7, M.8, M.9, M.10, M.11, E.1, E.2, E.3(1), E.3(2), E.4, E.6
- Chapitre VII: Sous-section 12

- critères d'évaluation pour une aire d'agriculture urbaine dans des bacs ou une aire de vente, d'entreposage ou d'étalage de produits agro-alimentaires (tels que fleurs, plantes, fruits et légumes) sur un terrain non bâti 282.98, a. 76.
  - **327.** Afin de minimiser les impacts sur le voisinage, lorsque l'usage conditionnel est une aire d'agriculture urbaine dans des bacs, une aire de vente, d'entreposage ou d'étalage de produits agro-alimentaires (tels que fleurs, plantes, fruits et légumes) sur un terrain non bâti, une demande doit respecter les critères suivants :
    - 1° l'aire d'agriculture urbaine dans des bacs et l'aire de vente, d'entreposage ou d'étalage doivent s'harmoniser avec le milieu urbain;
    - 2° l'aire d'agriculture urbaine dans des bacs et l'aire de vente, d'entreposage ou d'étalage doivent contribuer à l'amélioration de l'aménagement des lieux;
    - 3° les bacs de culture ou le mobilier doivent être conçus de manière à en faciliter l'entretien et à respecter le caractère des lieux et des bâtiments voisins;
    - 4° les aménagements permanents et le mobilier doivent être conçus de manière à en faciliter l'entretien et à respecter le caractère des lieux et des bâtiments voisins;
    - 5° des mesures de mitigation, tel un écran massif ou végétal, sont privilégiés;
    - 6° l'emplacement d'une enseigne, le cas échéant, doit respecter le caractère des lieux et des bâtiments voisins.
- Chapitre II: Section II Secteur d'une catégorie de la famille mixte
  - **385.2.** Une aire d'agriculture urbaine dans des bacs et une aire de vente, d'entreposage ou d'étalage de produits agro-alimentaires (tels que de fleurs, plantes, fruits et légumes) peuvent être autorisées sur un terrain non bâti dans un secteur de la catégorie M.7 conformément à la procédure des usages conditionnels, aux conditions suivantes :
    - 1° l'usage doit être exercé de façon saisonnière, entre le 31 mars et le 1<sup>er</sup> novembre;
    - 2° un plan d'aménagement du terrain doit être soumis;
    - 3o les bacs de culture et le mobilier ne doivent pas être laissés sur place du 1<sup>er</sup> novembre au 1<sup>er</sup> avril;
    - 4° une seule enseigne au sol, d'une superficie maximale de 1 m<sup>2</sup> par face et ne comportant aucune source lumineuse, peut être installée;
    - 5° l'usage doit être exercé dans un but socio-communautaire ou éducatif;
    - 6° sur un terrain adjacent à un secteur de la catégorie R.1 à R.3, M.1 à M.3 ou M.5, l'aire de vente, d'entreposage ou d'étalage doit être implantée à au moins 3 m des limites d'un terrain situé dans un tel secteur.

## **Règlement d'urbanisme de l'arrondissement Villeray - Saint-Michel – Parc**

### **Extension**

- Chapitre VI: Sous-section 2 Usages autorisées dans les catégories E.1(1) à E.1(4)
  - 294. La catégorie E.1(1) comprend les usages spécifiques suivants:
    - 1. Jardin communautaire
    - 2. Parc
    - 3. Promenade.

## **Appendix O: Fredericton Policy Review**

### **Municipal Plan**

- No mention of food or agriculture

### **Zoning By-law NO. Z-5 A Zoning By-law for the City of Fredericton**

- 7.3(9) (a) Where permitted, the *keeping of hens* shall comply with the following:
  - (i) be restricted to lots where there is an existing single-detached dwelling
  - (ii) a maximum of 3 hens can be kept; roosters are prohibited
- 8.1 Comparative Use Chart
  - Keeping of Hens is a conditional use in the following zones: R-2, R-3, R-4, R-5, TP-2, TP-3, TP-4, TP-6

## **Appendix P: Halifax Policy Review**

### **Downtown Halifax Secondary Municipal Planning Strategy**

- No mention of food or urban agriculture

### **Municipal Planning Strategy for Dartmouth**

- No mention of food or urban agriculture

### **HRM Regional Municipal Planning Strategy**

- Table 2-1: Open Space Typology
  - Agriculture: areas important for sustainable production of food
- 6.5.1 Cultural Functional Plan
  - 6. Leisure and celebration - Civic events and festivals, social gatherings and sport, food and drink and local food production and celebration
- G-14, (i): opportunities for integrating small-scale food production and community gardening into site and building design

### **By-Law Number A-300 Respecting Animals and Responsible Pet Ownership**

- No mention of livestock, poultry or bees



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