

**Phenomenological Study of Urban Vegetable Gardening in Halifax: How
Does Urban Vegetable Gardening Activity Affects the Daily Lives of the
Gardeners and Their Sense of Community?**

Thesis by: Takuya Ozawa,

BSc, Honours in Environmental Science, Dalhousie University (2010)

Supervised by Dr. Ruth Fordyke

Assistant Professor of Department of Economics

Executive Summary

Due to the propagation of the Internet and several other changing factors, the geographical sense of community has somewhat become unnecessary. However, the quality of sense of community through indirect communication via Internet or other mass media is not proven to be the same as that of direct communication. Therefore, this research's main purpose was to discover and understand the real experience of urban vegetable gardeners in Metro Halifax, or so-called Halifax, which is the urban part of Halifax Regional Municipality, and how a sample Haligonians perceive sense of community. Three main research questions were:

1. How do urban vegetable gardeners perceive sense of community, and how does vegetable gardening activity affect that perception?
2. What are their opinions about the social benefits and costs of participating in the vegetable gardens?
3. What are their concerns and suggestions for future improvements of urban vegetable gardening in Halifax?

In total 17 participants participated in this study. Face-to-face individual interview was conducted with additional use of questionnaire. One of the most notable results was that the key elements of sense of community were defined by participants as trust, sharing and reciprocity, which were consistent with past research done related to the research questions. Furthermore, it was discovered that urban vegetable gardening activity could both newly establish and enhance all these three elements of sense of community.

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Takuya Ozawa

Chapter 1: Introduction

Review of Problem

In modern urban areas, particularly in industrialized countries, the importance of a "sense of community" at the local level has been somewhat altered due to a variety of causes. The availability of the Internet and TV has allowed us to get information or make friends without physically interacting with each other. Social Networking Sites (SNS), such as Facebook or Twitter, are getting more and more popular today worldwide. Since a community may be established from any grouping of people regardless of whether they directly interact, we are potentially able to build a community without directly contacting each of its members (Simson & Straus, 1997). However, whether this new community created through the advancing technology could give the members the same degree of sense of community has not been clear. Indeed, past research has indicated that people with higher frequency of using the Internet or watching TV feel more isolated, and have lower well-being compared to people with low frequency of use (Kraut, *et al.*, 1998). At the same time, we are able to connect with people beyond geographical boundaries on a global scale due to advancing technology. How has this increased variety of communication tools, community group size and interaction structure changed our sense of community?

One of the potential effects of urban residents having less direct human communication could be a change in the quality of social interaction in their neighborhood. Residents in urban neighborhoods tend to move in and out frequently, and they may find it difficult to establish an emotional or personal relationship with an already established community in their new neighborhood. Under such conditions, if a person, especially within the aged population, has no phone, TV or Internet, he/she will likely feel isolated and will suffer psychological discomfort, and therefore lower well-being (Kraut, 1998). Although the term "well-being" itself does not have a single agreed upon definition, it is an individual's overall assessment of their life (Dolan, Peasgood & White, 2008). Did urban residents' quality of social interaction change as new communication technology developed?

One potential means to affect people's sense of community is urban agriculture. Defined as "food production practices that take place in and around cities" (Drescher, Holmer & Iaquinta, 2006), urban

agriculture is gaining popularity in many parts of the world (Levkoe, 2006; Mendes, 2008; Vogl, 2004). Its growth is being spurred on by several issues. For example in North America, recent food contamination news and the increasing control of the food industry by a few agribusiness corporations have drawn attention of urban dwellers to the issue of their own food security, in addition to several environmental problems related to food production (Hodge, Merrifield & Gorelic, 2002). Therefore, although the main reason of increasing popularity of urban agriculture varies from city to city, urban agriculture is becoming a choice of land use in urban areas.

Urban agriculture is not just limited to what can be supplied by local farmers, but is also increasingly partaken in by urban residents. Some urban dwellers grow their own food for health benefits, by eating fresh harvest and spending more time outside doing physical work with soil. In addition, urban agriculture provides social benefits due to the emergence of opportunities to cooperate with other individuals, exchanging their produce with others, and by meeting new people who have common interests. Another notable benefit is increased information flow about the process and know-how of food production and impacts of food production on the natural environment. Urban gardeners could also get psychological benefits by working physically actively with soil, or more generally, with nature. Several researchers have found that physical activity (including vegetable gardening) is associated positively with well-being (Ross & Haynes, 1988; Scully *et al.* 1998). Hence, urban vegetable gardening has the potential to improve well-being of gardeners along a variety of dimensions.

As previously mentioned, due to the propagation of the Internet and several other changing factors, the geographical sense of community has somewhat become unnecessary. However, the quality of sense of community through indirect communication via Internet or other mass media is not proven to be the same as that of direct communication. Therefore, this research's main purpose is to discover and understand the real experience of urban vegetable gardeners in Metro Halifax, or so-called Halifax, which is the urban part of Halifax Regional Municipality, and how a sample Haligonians perceive sense of community, of which the definition and concept will be described in the next chapter.

Objectives

This research used the research methodology of a phenomenological study and looked into the urban vegetable gardens in Metro Halifax area of Halifax Regional Municipality (HRM), explored and tried to understand the whole real lived experience of the urban vegetable gardeners. As interviews progressed, a few participants from Dartmouth, which is outside Metro Halifax area but within the jurisdiction of HRM and considered urban area, were incorporated into the research. The theoretical framework of this study is provided in Appendix A. There were three major research questions designed prior to the data collection:

1. How do urban vegetable gardeners perceive sense of community, and how does vegetable gardening activity affect that perception?
2. What are their opinions about the social benefits and costs of participating in the vegetable gardens?
3. What are their concerns and suggestions for future improvements of urban vegetable gardening in Halifax?

Significance of the study

Although the significance of the research was broadly outlined above as to be concerned about a deterioration of community with urban gardening as a potential reason, a more detailed explanation is provided in the following. There are three reasons why this research was considered worthy of conducting in the area of environmental science. First, several pieces of research have found that conservation of urban green spaces is important for preventing the further degradation of the natural environment (Domene & Saurí, 2007). Second, the loss of sense of community in urban areas is prevalent in modern society, and some research suggests that the decrease in collective action in an area will be a cause of destruction of the natural environment (Pretty, 2001). According to a recent report by the United Nations Population Fund (UNFPA), 5 billion people will be living in urban areas by 2030 (UNFPA, 2007). Attitude and choice of urban residents in everyday life will therefore have a significant impact on our society and the natural environment, and they could have both positive and negative effects. Third, there is an increasing trend that the residents of Halifax are requesting to the local government for wider availability of community gardens,

which includes vegetable gardens. For instance, a recent report by the Halifax Regional Council showed that there is an increasing interest of participating in community gardens among residents (Halifax Regional Council, 2009). This research will attempt to explore how the currently existing vegetable gardens are affecting participants and their sense of community.

Since this study aimed to explore the real experience of the urban vegetable gardener, the researcher selected a method called phenomenological study, which is relatively new qualitative research approach of trying to understand the “whole of” the phenomenon (Heidegger, 1953/1996). The advantage of phenomenological study over quantitative approach oriented study is that it focuses on understanding the whole, while quantitative study often exclude unquantifiable or immeasurable by making assumptions, regardless of their intention. Although sense of community has been extensively studied using quantitative approach in the past, the researcher determined that phenomenological study would result in more in-depth understanding of the urban vegetable gardening experience. The outcome of this research may be used for the decision-making process concerning urban land use and city planning primarily in Halifax, but also in other similar types of urban municipalities.

The next chapter introduces histories and notable findings of urban vegetable gardening from literature, and explains concepts of terms that are key elements of this study.

Chapter 2: Literature Review

Introduction

This section is designed to provide background information of terms that are essential to this research and past research done related to my research questions. An extensive literature review was conducted prior to the interview phase of this research, and additionally further literature review was undertaken to explore if the participants' experience or statement is consistent with that of other urban vegetable gardeners in general. The result of post-interview literature review was incorporated into the Discussion section of Chapter 4. In terms of searching for the data or information related to Halifax, the official website of Halifax Regional Municipality was extensively used for the access to official maps and documents.

In the following, first a brief summary of the history of urban agriculture in North America and Halifax is stated, followed by definition and explanation of the three different types of vegetable gardens. Moreover, the importance of green spaces in urban areas for mitigating the negative impact to the natural environment is introduced. Second, benefits and costs of household gardens and community gardens are explored by introducing the notable previous research, which investigated the effects of gardening on social aspects of the community and on the natural environment. Third, several terms related to this research will be defined and the researcher explains why they are important to this research, and how they are related to urban agriculture.

The literature review was conducted using mainly peer-reviewed journals which were available online through the access provided by Dalhousie University. In addition, the researcher obtained published books related to this research topic by borrowing through the University Library service. For up-to-date statistics data and governmental documents, the Internet was extensively used to gain access to this information.

History of urban agriculture and vegetable gardening

Urban agriculture, specifically the community gardening movement, has a long well documented history and has changed its main purpose over time in different parts of the world. In Canada, the concept of urban community gardens emerged after the period of Industrial Revolution in the late nineteenth century, which made thousands of rural dwellers move to urban areas (Quayle, 1989). The first well-documented community gardens were Railway Gardens, which were recognized between 1890 and 1930 (Martin, 1998). The Canadian Pacific Railway (CPR) took a lead in creating urban gardens for a number of reasons, which include economic benefits, improvement of public relations, and incorporation of European railway traditions (Martin). Following to this movement was the period of School Gardens (1900 – 1913), which was mainly to teach students agriculture. Classes were mainly held outside, and students learned the cycle of nature and how to live harmoniously with nature through growing plants from seeds by themselves (Martin). Shortly after or coinciding with each other was Vacant Lot Garden movement, which originally started in Great Britain to transport visually unfavourable vacant lots into beautiful urban gardens (Baeyer, 1984). They acted as an effective tool to remediate and solve problems the cities had during that time period, which include pollution and slums. This beautification reason was converted during the inter war period of World War I and World War II (1914-1947) into supporting troops, so that those gardens were used to grow food, instead of flowers, so that the food can be used to support the soldiers of their own country. Shortly after the World War I, this movement was named Victory Garden Movement (Brown, 2000). After the war, more people started urban agriculture for recreational purposes, such as engaging in community gardens (Domene & Saurí, 2007). After the end of the World War II, between 1965 and 1979 in particular, people started a counter-culture movement across North America (Quayle). This was the time when Vietnam War was under several questions and civil rights movement gained a strong momentum. More people participated in urban gardening due to the growing concerns, parts of which are collapse of traditional communities, food additives and pesticides and degradation of the natural environment (Quayle). Since then, urban gardens have been visible in every major city Canada.

In Halifax, shortly after the settlement by Europeans in 1749, gardens were developed for the

aesthetic beauty in a manner reminiscent of immigrants' country of origin, and they were enjoyed by wealthy class of settlers (Halifax Regional Council, 2010). In 1984, still currently existing Halifax Public Gardens was designated as a National Historic Site, due to the fact that the garden was one of the rare surviving examples of a Victoria Garden in Canada (Halifax Regional Council). Currently there are approximately 18 community (allotment) gardens and farms in HRM, and as described in Chapter 1, residents are demanding for more community gardens in the city.

Three types of urban vegetable gardens: home garden, allotment garden and community garden

Urban farming may be categorized into three categories: home gardens, allotment gardens, and community gardens. Home gardens are usually maintained by individuals or households who have access to land, which they have purchased for themselves. (Drescher, *et al.*, 2006). They include backyard gardens, which are very common in Halifax. In this research, this type of vegetable garden is called “backyard garden” thoroughly from now on. Allotment Gardens are separated parcels of land allocated for individuals or groups of people, and the gardeners work independently on their parcels. The lands are made available through either private enterprises or government action. Community gardens are defined as a garden where people share the basic resources of land, water, and sunlight. They collectively produce food for mainly self-sufficient use. Although allotment gardens and community gardens are often mixed and thought as same type of garden, this research interviewed gardeners of all the three types of vegetable gardens in Halifax.

Importance of green space in urban areas

Urban populations are increasing, and this is arguably one cause of the global degradation of the natural environment. The urban ecological footprint exceeds the capacity of the city, and therefore urban populations are a driving-force of the global environmental change (Grimm, 2008). In addition, there is a trend that even higher percentage of people is choosing to live in urban areas; in fact, in 2008, for the first time, more than half of the global population lived in urban environments (United Nations Population Fund,

2007). Miller (2005) notes that urban residents who live in areas with low species diversity are experiencing ‘extinction of experience with nature’, in other words, a disconnection from nature. Therefore, conservation of green spaces in urban areas is important for not only mitigating the further degradation of the natural environment, but also for having opportunities for urban residents to enjoy the nature without traveling long distance. Vegetable gardens, which are the subject matter of this research, could act as a way to promote the benefit and use of green spaces in urban areas.

Benefits of urban vegetable gardening

Engaging in gardening activities has several benefits, including satisfaction from learning gardening skills, tangible benefits such as food harvesting, or more indirect effects on the well-being of gardeners (Kaplan, 2001). Each gardener has their own reason for doing gardening work, either for their own benefit, for other members of the community, or for the natural environment. Clayton (2007) indicated two main motivations why gardeners start gardening: 1) social benefits, and 2) benefits intrinsic to nature. Gardening activities also can benefit not only the gardeners themselves, but also their neighbors and community. Kearney (2006) found that gardening was positively related with neighborhood satisfaction, and the public view of a garden increased community satisfaction as a whole. These pieces of research indicate that the benefits of gardening are potentially beyond individual.

Community gardens are known to have some unique benefits for members of the garden. Teig *et al.* (2009) found that participants in community gardens chose to remain in the garden because of the social opportunities they offered. Although a few gardeners expressed that being part of the garden community was stressful because of the expectation for their participation, strong friendship within the garden developed through face-to-face interaction. Although the benefits of community gardens are documented in several studies, there is little information about the intervening effect mechanism of how gardens affect their neighbors’ health and well-being (Teig *et al.*). This research aimed to explore this relationship by having open-ended interviews with urban vegetable gardeners from diverse social background.

Green spaces are one of the limited opportunities for urban residents to interact with the natural

environment, and gardening is one way for them to experience nature (Clayton, 2007). According to Kellert (1997) and Wilson (1984), the humans have a biologically determined need to feel affiliated with, and connected to, the diverse natural world. Therefore the existence of vegetable gardens could give valuable opportunities for those who cannot travel long distance the city because of economic or physical hardship, to feel close to, and learn about, nature.

Vegetable gardening also has the potential to increase the frequency of social interaction. Lewis (1990) argues that gardening provides gardeners with an opportunity to socialize with others, since the action is taking place in publicly visible locations and often shows publicly visible results. In mainstream human psychology, it is necessary for humans to feel connected to others and to feel respected by members of a community, which is indicated as a basic human need (Myers, 2000). Therefore, if the frequency of direct social interaction is positively correlated with the existence of vegetable gardens, gardeners and their neighbours could both benefit to some extent. However, some studies indicate that gardening can also have negative impacts, especially on the local ecosystem. For example, planting invasive non-native species, use of toxic chemicals, and excessive use of water can potentially have negative impacts on the natural environment (Steinberg, 2006). Therefore careful investigation of gardens is required to ensure that the local ecosystem is respected and conserved.

Social capital

There is no universally accepted definition of social capital. However, common conceptualizations of social capital are present. Social capital is defined as the potential in a social relationship that will enable members of the community to make collective decisions for achieving shared goals (Putnam, 2000; Coleman, 1988). The most common conceptualization of social capital has two dimensions: cognitive and structural (Yamaoka, 2008). Cognitive social capital is peoples' perception of the level of interpersonal trust, reciprocity and sharing. Structural social capital involves a variety of networks of people, such as membership to a volunteer organization, which lead to collective actions. Two of them are usually connected and mutually reinforcing. In this research, although both dimensions were explored as a result of

the nature of phenomenological study, cognitive dimension of social capital was mainly investigated (Appendix A).

According to a review conducted by Kawachi *et al.* (2004), several studies have found that the degree of social capital is positively correlated with health and well-being. One national-level study of the countries from Asia, Europe and North America found that the level of social capital was positively correlated with satisfaction in life (Bjørnskov, 2003). Semenza and Jan (2008) investigated the change in community members' perception of their neighborhood by building new public amenities such as community gardens, benches, interactive street paintings and art murals in Portland, Oregon. The result showed that generally the community building activities had a positive outcome on their psychological health, sense of community and overall social capital of the community members.

Social capital is one of the key elements when considering sense of community. Lin (2001) suggests that social capital acts as the umbrella term for the concept of community. According to Putnam (2000), social capital and community are “conceptual cousins” (p.21) and they are positively related, and involvement at the community level leads to high levels of reciprocity, trust and positive community networks. Throughout this research, social capital is a key factor and directly associated with the concept of sense of community, which will be explained in the next section.

Sense of community

Sense of community is defined by McMillan and Chavis (1986) as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together.” (p.9) Individuals can feel a sense of community in a variety of situations. They can have such a sense in geographical proximity such as their neighbourhood, or extended community such as in church, job, school or sports team (Lyon, 1999). The former is named as ‘community of place’ and the latter one is called ‘community of interest’ (Heller, 1989). This research explored how urban vegetable gardeners' overall sense of community was affected through their daily experiences related to vegetable gardening. The researcher's primary concern was the loss of

geographically defined sense of community in the absence of vegetable gardens, which is in this research equivalent to the neighbourhood.

Over the last few decades, researchers have tried to measure the sense of community, and found unique indications. Michelson (1976) found that if community members perceive one another as homogenous, their interactions would be more likely to produce friendship and a sense of community. Nasar and Julian (1995) indicated that members who live in a neighborhood with mixed-use areas such as parks or outdoor courtyards in apartment buildings, are likely to walk from one place to another, while members who live in an area with only single-use areas, such as single-family housing, tend to use cars more often for shopping and recreational purposes. Since people with heavier reliance on cars for movement will be less likely to develop casual friendships and contacts with neighbors, residents in mixed-use neighborhoods are more likely to have a stronger sense of community than residents in single-use neighborhoods. According to this finding, community gardens can increase the sense of community of nearby neighborhoods due to the creation of a mixed-use land, and therefore increase their social capital. Many studies have also demonstrated that sense of community is positively associated with active participation in community activities and subjective well-being (Pretty, 1996; Davidson, 1991).

The urban community has unique characteristics, in comparison to a rural community. One major difference is that daily social interaction in urban areas often involves exposure to strangers. On the other hand, individuals who grew up in rural areas would tend to interact and communicate with individuals whom they have known for longer periods of time (Heller, 1989). Wirth (1938) notes that people living geographically close to each other in large cities tend to have weaker emotional and social ties, and that leads to an increasing tendency of mutual exploitation and competition.

Although urbanization has progressed significantly and propagation of the Internet access globally has changed the way of communication for many people, political influence and power are still allocated by geographical region. Voting units are still determined by regions, hence if members of the regions have no unity or connection, it may be hard for voters to imagine that their vote has significance in the decision making process (Heller, 1989). For this reason, the increased level of sense of community could potentially

give positive benefits to members of the community. Since it will lead to more shared vision and common goals within the community, it can at the same time increase political influence through higher collective power (Heller). This research was not intended to prove any direct linkage between the degree of political participation and vegetable gardening activity, but rather to discover and explore the multiple variables that are affecting the urban vegetable gardeners' and their neighbours' political participation if any.

Well-being

Well-being has multiple dimensions. Defra (2005) (Department of Environment, United Kingdom, Food and Rural Affairs) provides a concise definition of well-being:

Well-being is a positive physical, social and mental state; it is not just the absence of pain, discomfort and incapacity. It requires that basic needs are met, that individuals have a sense of purpose, that they feel able to achieve important personal goals and participate in society. It is enhanced by conditions that include supportive personal relationships, strong and inclusive communities, good health, financial and personal security, rewarding employment, and a healthy and attractive environment.
(n.p.)

Several researchers have tried to measure an individual's well-being by estimating subjective and objective dimensions of well-being. Subjective well-being is determined by an individuals' assessment of their own circumstance, or in other words, their quality of life (Diener, 1999). Objective well-being is attributed to socioeconomic elements. Some examples include income, health, profession, and religion. Until recent decades, economists dominantly focused on this dimension of well-being, since it was believed to be easier to measure and give consistent results (Helliwell, 2004). However, Easterlin (1996) has found that material wealth does not increase people's well-being when it reaches the plateau point. Furthermore, degradation of the natural environment can in theory be counted as a product in GDP calculation. Diena and Oishi (2003) argued that the production of material wealth requires use of natural resources such as water, trees and fossil fuels and produces by-products that are destructive to the natural environment. They also pointed out that targeting material prosperity as our goal can overshadow the critically important part of our

well-being, such as love, friendship and spirituality. We can also find from our own experience that comparison of an individual's material wealth never ends, and some people are dissatisfied by the fact that they are less materially wealthy. However, this does not always mean that those who have more material wealth are happier. It may be possible that they work more than others, and therefore have less time to spend with family. Therefore, research methods focusing on subjective well-being also needs to be developed further to make a larger portion of the population happy, while making the level of natural resource use sustainable.

Only in recent years, economists and psychologists have started to demonstrate that subjective well-being can be measured with reliability and validity, by the use of self-rating questions about happiness and quality of life (Helliwell, 2004). This research included the concept of subjective well-being as one of the outcomes affected by the existence of vegetable gardens in Halifax.

Conclusion

This chapter introduced background information necessary to understand and previewed the key effects and elements of urban vegetable gardening. As the research framework (Appendix A) shows, the main components of sense of community were determined as sharing, trust and reciprocity. Based on this assumption and key findings from previous research, the researcher conducted open-ended structured face-to-face interviews with urban vegetable gardeners in Halifax. In the next chapter, detailed methods and steps of the research are introduced and explained.

Chapter 3: Methods

Introduction

In this research, there were three major questions to be explored:

1. How do the vegetable gardeners perceive of sense of community, and how will vegetable gardening activity change that perception?
2. What do they think are the social benefits and costs of participating in the vegetable gardens to themselves, their neighbourhood, and the natural environment?
3. What do they think are the current concerns and future improvements for urban vegetable gardens in Halifax?

The theoretical framework for this study, originally created by the researcher myself, is shown in Appendix A. A qualitative approach, specifically phenomenological study, was selected. Qualitative research is inductive, which means that the theory will emerge after the data collection (Rudestam & Newton, 2007). This method was chosen since the main purpose of this research was to understand the whole perception of urban vegetable gardeners. Researchers for phenomenological study typically use interviews or extended conversations as their main source of data, to explore the participants' essential nature of ideas (Rudestam & Newton). For data collection, face-to-face interviews were conducted, and each interview was recorded for later analysis. Participants were selected using purposive and snowballing techniques so that the data results have targeted and meaningful outcomes. This research is also a constructivist approach since new knowledge will be found or discovered not from existing facts but constructed by exploring an active, engaging mind, in this study the experiences of the gardeners (Rudestam & Newton). This chapter explains how sampling, data analysis, instrumentation, limitation and delimitation are defined throughout this research.

Sampling

The sample population was selected using purposive and snowballing sampling techniques. By using the purposive sampling technique, this research was able to increase the scope of data and discover the

whole perspectives of the phenomenon (Lincoln & Guba, 1985). The snowball sampling technique is common in qualitative study, and it consists of initially selected population and additional potential participants who were recommended by the previously identified participants (Rudestam & Newton, 2007). In this research, first the researcher sent an invitation form to stakeholders of urban vegetable gardens who could be located on a map of Halifax Garden Network by E-mail (The Halifax Garden Network, 2008). Shortly after, the invitation form was shared through the mailing list of local food interested group. The researcher sent a follow-up E-mail with an Interview Consent form and Participant Agreement form to the people who contacted the researcher after receiving the invitation E-mail (Appendix C & D). After each interview, the researcher asked the participant to introduce his/her acquaintances who also grow vegetables in the city.

Rudestam and Newton (2007) explain that most phenomenological studies deal with a relatively small number of participants, and they state that ten or fewer participants may be appropriate. My research therefore aimed to interview at least four participants from each of three types of vegetable gardens: i.e., allotment gardens, community gardens and household gardens. In all, the total number of participants was 17 (Figure 1). Out of 17, 13 of them had a backyard garden, 4 had a plot in an allotment garden, and 8 had worked in a community garden. By interviewing gardeners from all three types of vegetable gardens, this research could explore the whole perspective of the topic.

Once stakeholders were identified, participants first received an interview consent form and a participant agreement form by E-mail (Appendix C and D). We contacted through E-mail until the day of interview, and participants were given the following locations to choose the interview location from

1. Participant's garden
2. Participant's residence
3. Local coffee house
4. Dalhousie university campus

Most participants chose nearby local coffeehouse as interview location, and a few participants offered their residence and invited the researcher over to observe their garden. Only 1 participant chose Dalhousie

university campus.

During the interview, first participants were asked to sign the participant agreement form (Appendix D) and fill out a short questionnaire (Appendix B). This questionnaire was essential to collect participants' pertinent information (age, occupation, whether they live with children, highest level of education, years of vegetable gardening experience in the current location and the type of vegetables they grow in their garden) while respecting their privacy at most possible. Once the questionnaire was completed, face-to-face individual interview was conducted. Each participant was asked a series of open-ended questions (Appendix E), and he/she was allowed to expand the topic if necessary.

Rudestam and Newton (2007) argue that in most phenomenological studies, the interviewer interacts with participants for a relatively long period of time. Although time duration of the interviews varied for each participant, on average interview lasted for approximately 40 minutes, which was within the proposed duration of between half an hour and one hour.

In general, qualitative research focuses on processes and meanings over measures of quantity, frequency and intensity (Denzin & Lincoln, 1998). This research was directed towards a holistic approach and aimed for an in-depth understanding of urban vegetable gardening by exploring the phenomenon in whole perspective. Therefore, this research was also a discovery-oriented approach (Rudestam & Newton, 2007).

Instrumentation

A digital audio recorder was used to record the conversation between the participant and the researcher. The recorded data was securely stored in the researcher's personal computer with password that is only known to the researcher myself. The data was completely deleted once the thesis was submitted. In addition, a journal was used to record participant's additional impressions that could supplement the analysis process. For data analysis, a few pieces of blank paper were used to list up the frequently expressed words and to discover essential themes introduced by all the participants. For data analysis, Microsoft Excel (2008) was used to create graphs and tables based on the data collected through

questionnaire (Appendix B).

Data analysis

A posteriori coding scheme was used for data analysis. The researcher alone transcribed the recorded interview results, and this process took unexpectedly considerable amount of time (approximately 20 hours in total). Once the transcription was completed, the researcher read the each participant's transcript repeatedly, and identified essential and unique keywords for each open-ended question (Appendix E). Once this step was completed for all the 17 participants, the researcher counted how frequently different participants mentioned common keywords or phrases for each question. Based on the results, the researcher ranked top 3 most frequently stated keywords or phrases into a table by categorizing into each question (Table 2).

Limitation

There were three major categories for limitation of this research: financial, spatial and temporal. The financial limitation was the absence of monetary compensation, due to the lack of funding and researcher's financial constraints. The spatial limitation of this research was that I could only conduct interviews with vegetable gardeners in Halifax. However, since similar research has been done in other cities of the world, and my main focus was the vegetable gardens in Halifax, this limitation was also delimitation. Temporal limitation was that the interviews were conducted only during the period of January 29th and March 6th, which is not the regular gardening season in Canada. However, since most questions were retrospective and all the participants were in the same situation, the researcher determined that this would not bias or skew the data.

Delimitation

This research's delimitation consisted of two points. First, the researcher primarily focused only on social and psychological aspects of the phenomenon of the study, since the theoretical framework

(Appendix A) became significantly complex when the research design included other aspects such as economic and ecological. However, the participants could answer the questions by addressing these additional aspects, and in which case I incorporated them as another key element of urban vegetable gardening in Halifax. Second, the interviews were conducted only with the currently existing gardeners in Halifax. By focusing on a relatively small number of participants, I was able to explore the detailed, real day-to-day experiences of the participants, and therefore was able to give valuable feedback information to local government if appropriate.

Chapter 4: Questionnaire and Interview Results

Introduction

This chapter introduces the results of questionnaire and the overall summary of the interview results by the use of graphs and tables. First, the summary of questionnaire results and a map of HRM, which shows how much area (garden location) this research covered through interviews, are introduced. (Appendix F). With the use of graphs, this part is intended to give readers an overview of the demography of participants (age, living with children or not, occupation, highest level of education, years of vegetable gardening experience, and types of vegetables grown in their current garden). It should be noted that the locations of household (backyard) garden are not identified on the map due to the confidentiality of the participants. Second, key themes discovered through interviews are introduced, with additional use of a table, which categorized key themes by questions.

Questionnaire results

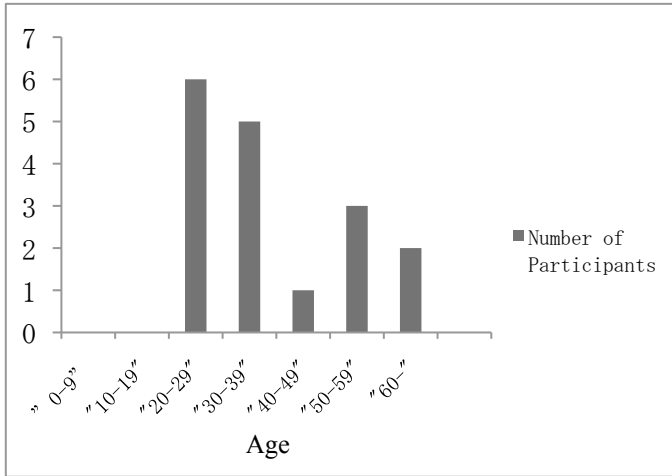


Figure 1: Age distribution of participants

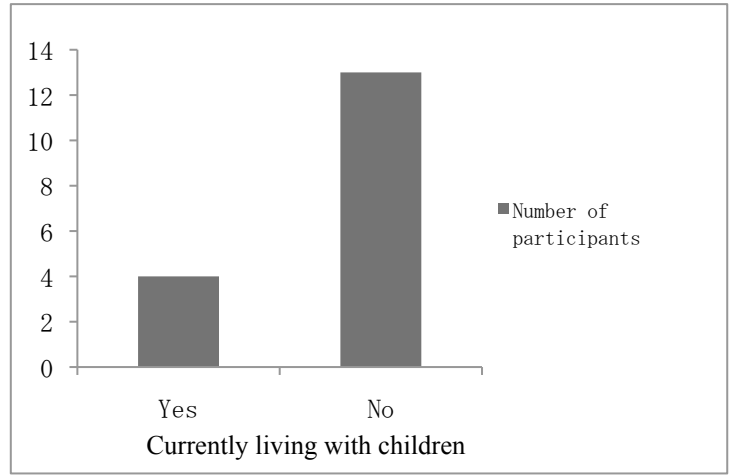


Figure 2: Do participants live with children?

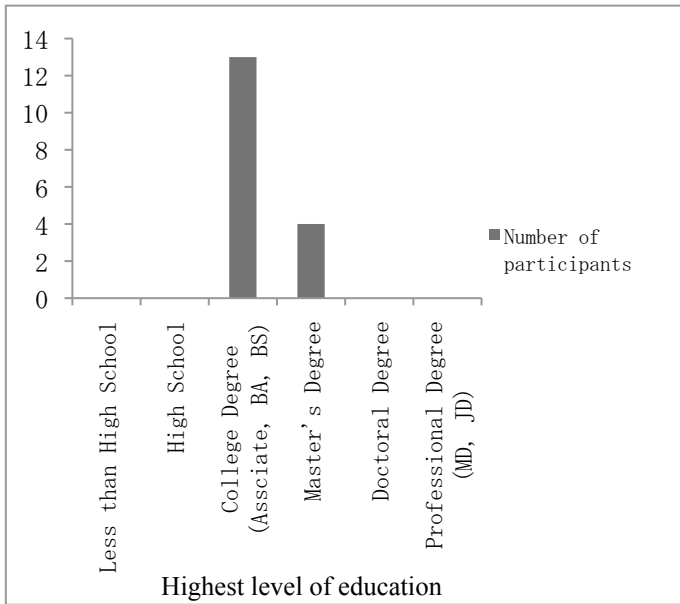


Figure 3: Participants' highest level of education

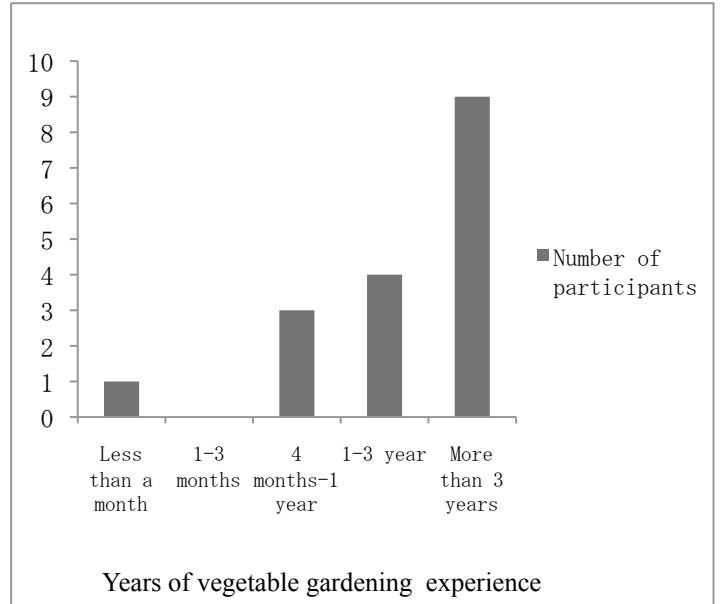


Figure 4: Years of vegetable gardening experience

Rank	Name of vegetable/fruit	Number of Participants
1	Tomato	16
2	Herbs	12
3	Beans	11
4	Lettuce	10
5	Carrot	9
6	Beats	8
7	Potatoes	7
8	Cucumber	6
	Kale	
	Peas	
	Radishes	
9	Garlic	5
	Raspberry	
	Squash	
	Swiss chard	
10	Broccoli	4
	Spinach	
	Turnip	
	Zucchini	
11	Blueberry	3
	Corn	
	Onion	
	Salad greens	
	Strawberry	

Rank	Name of vegetable/fruit	Number of participants
12	Asparagus	2
	Blackberry	
	Cabbage	
	Currant	
	Gooseberry	
	Grapes	
	Mustard	
13	Bok choi	1
	Calendula	
	Cherries	
	Cress	
	Eggplant	
	Kiwi fruit	
	Komatsuna	
	Leek	
	Mizuna	
	Pear	
	Plum	
	Pumpkin	
	Rhubarb	
Shungiku		
Walnut		

Table 1: Ranking of vegetables (and fruits) grown by participants

Figures and a table above were created based on the data from the questionnaire filled out by participants. They are designed to provide the overall picture of the interview participants.

Figure 1 shows the age distribution of total 17 participants for this research. With the exception of the under aged population, a wide range of age groups was included in this study. The most common age group was between 20 to 29 years old, followed by the age group of 30 to 39 years old. This may have been anticipated owing to the fact that the researcher is a university student and most accessible age group

is someone in the same cohort. To countermeasure this tendency or bias, this research chose the snowballing sampling method for participants recruitment. Hence, as interviews progressed, the researcher was able to recruit more participants from not only different age group but also from different education and socioeconomic background. In addition, the locations of the participants' gardens covered most of the Metro Halifax area (Appendix F). Therefore this research could provide the "whole" picture of the urban vegetable gardening experience in Halifax.

Figure 2 shows whether participants lived with their children at the time of interview. The reason why this question was asked was to examine if living with children would affect the degree and/or quality of social interaction with neighbours. However, due to the nature of the design of this study and the inadequate number of sample population, the researcher was not able to make any rigorous statistical evidence. As the figure implies, most participants did not live with their children, although it is worth noting that none of the participants lived alone in his/her dwelling.

Figure 3 shows participants' highest level of education at the time of the interview. The majority of the participants had, or are expected to receive, some form of College Degree, and the other four participants had, or are expected to receive, Master's degree. This table may imply that some perspectives from relatively low educational achievement were not incorporated into the results, which may hold true. Due to the time constraint and participants' respected privacy, the researcher could not target to recruit gardeners with specific educational achievement. To remediate this potential bias or lack of "the whole" view of the urban vegetable gardening experience in Halifax, the researcher also asked participants to state their occupation if they felt comfortable, and the result showed that the participants had diverse employment status, which include: students, urban gardening project coordinator, university and high school teacher, writer, laboratory technician, videographer, day labourer, painter, environmental activist, retired, and farmer. Therefore, the interview results were able to cover a diverse, if not complete, dimension of urban vegetable gardening experience in Halifax.

Lastly, figure 4 shows participants' length of vegetable gardening experience in current garden location. Unexpectedly, more than half of the participants had been gardening in the current location for

more than three years. One participant explained to the researcher that he just started gardening in Halifax last summer of 2009. The researcher still included him in the study since he was also a farmer outside the city (in Tatamagosh) and had in-depth understanding and perspective of growing his own food. The fact that most participants had been gardening in Halifax for more than three years gave the researcher more opportunity to discover the essential meaning of urban vegetable gardening in the city.

Table 1 shows the variety of vegetables (and fruits) that have been grown and harvested by participants of this study. They were 46 in total and were listed by the order of the number of gardeners who grow the same vegetables (or fruits). Among them, tomato was the most commonly grown vegetable by participants, followed by herbs. Although the growing season is relatively short due to the climate and high latitude, we can infer from this result that most vegetables we consume daily could potentially be produced locally within the city.

Frequently stated key words or phrases

Q1: Why did you start growing your own vegetables?	1st	I experienced gardening when I was a child (10)
	2nd	Environmental reasons (5)
		I love growing plants/vegetables (5)
3rd	I love to grow my own food: Fresh vegetables taste better (4)	
Q2: How, if at all, has participating in vegetable gardening affected you?	1st	(Gardening is) relaxing: Felt relaxed the way I did not feel inside (5)
	2nd	Met people that I would have never met otherwise (4)
		Felt really good about myself doing it: Sense of satisfaction: Gardening can fulfill the person (4)
		Learning from others: Gave me opportunity to work with neighbours: Continuous learning (4)
	3rd	(Gardening) always gives you something to do: There is always something that matches the mood you are in (3)
		(Gardening) can give anybody a job: Career opportunity (3)
Felt better about my and family's health: Made me healthier: Physically wonderful (3)		
Q3: What do you think are social benefits/costs of having vegetable gardens?	1st	No negative (5)
	2nd	Got more connected with neighbourhood (2)
		(Gardening) gave us something to talk about: Topic of conversation with neighbours: No matter what social background you come from, you have that common topic to discuss (2)
		(Gardening is) pooling of resources together: Brings people together: More people you know, the more resources there are available (2)
		Took some time away: If I was not gardening, I had more time for other things (2)
	3rd	(Community gardens) could be a cause of some conflict (1)
		(Gardening is) a good reminder (1)
Concerned about vandalism and stealing (1)		
Q4: What other words or phrases will come up in your mind when you think about community?	1st	Sharing (of skills, idea, knowledge, plants) (9)
	2nd	Togetherness (4)
	3rd	Growing food (2)
		Common goals/interest (2)
		Caring (2)

Q5: What does the phrase "sense of community" mean to you?	1st	Sharing (4)
		Geographical (4)
	2nd	Knowing each other for a reason (3)
	3rd	Knowing that you are taken care of, and part of something (1)
		Belonging (1)
		Transfer of knowledge (1)
		Codependence (1)
		Includes nonhuman (1)
		Security (1)
Connectedness (1)		
Q6: Since you started growing vegetables, did your sense of community change in any way?	1st	Not sure (2)
		There is always something to talk about: (2)
	2nd	Made us feel like all of us individuals are community and we can do and change things together (1)
		Encouraged me to make gates within solitude (1)
	3rd	N/A
Q7: Have you gotten to know more neighbours and/or gotten to know them better since you started gardening? Yes: 13 No: 2 Not sure: 2	1st	Got to know each other better (3)
		(Gardening) gave us something to talk about (3)
	2nd	Building something overtime (=gardening) deepens the relationship (2)
	3rd	Garden is a place for new Canadians (1)
		Gardening helped me to establish a bond very quickly (1)
I did because we shared things (1)		
Q8: Do you think having vegetable gardens has changed your and your neighbours' feeling of trust? Yes: 8 No: 5 No change: 4	1st	When you open up and invite people to your home and share the things that you grow in your garden, they learn to trust you (2)
		I never saw things stolen or vandalized: Very few stealing of vegetables (2)
		Gardeners (in community garden) are very generous, and this type of person is the one who is drawn to community garden anyway (2)
		I feel more comfortable in the neighbourhood with gardens because it conveys the sense of people care about their home that means something to them: If there is a garden, that's a sign for me that whoever lives there loves where they live (2)
	2nd	My vegetables were stolen (1)
		Gardening has no barriers or boundaries (1)
		Cats problem (1)
		Made me more aware of my neighbours (1)
		We trusted each other more and more because we helped each other out (1)
	3rd	N/A

<p>Q9: Do you think having vegetable garden has changed your and your neighbours' feeling of safety?</p> <p>Yes: 12 No change: 3 Not answered: 2</p>	1st	We watch out for each other (4)
	2nd	I was concerned for vandalism and harvests getting stolen, but they never happened (2)
		I feel safer with anybody that has anything to do with the farming (2)
		Increased feeling of safety in the Bloomfield garden (2)
	3rd	Once you get to know people better, you feel safer (2)
		Gardeners have welcoming attractiveness (1)
		If there is a criminal element and they see that the people are out and about talking to each other and helping each other, they are much less likely to target you (1)
		If I see something that I love doing, then I feel safe in that place (1)
		Every garden has its own culture (1)
<p>Q10: Do you think that vegetable gardening has changed your frequency of social interactions with particular groups of people?</p> <p>Yes: 8 No change: 3 Not sure: 1 Not answered: 5</p>	1st	Made me deal with people who are not just my friends (3)
	2nd	You can build your own community by gardening (2)
		Met people who otherwise I would have never met otherwise (2)
	3rd	Neighbours wanted to interact, but they were respectful of my time (1)
		(Gardening) gave me more curiosity (1)
		(Gardening) made me more aware of where the food I am eating comes from (1)
		(Gardening gave me a topic to talk about (1)
		Increased interaction with gardeners (1)
		We stay in touch over the winter (1)
		Always brought us closer together (1)
		Even if the persons are not interested in gardening, they are interested in eating (1)
		(Gardening) decreased total interaction with people (1)
		(Gardening) is about doing something that I love and sharing with other people (1)
		(Gardening is) a way to build community (1)
		(Gardening is) a common ground with many people (1)
Gardeners seem to be connected to the earth (1)		
(Gardening) opened up formal avenues to informal moments (1)		
<p>Q11: Have you made garden-related exchanges with others?</p>	1st	Seeds (11)
		Friends (9)
	2nd	Harvests (8)
		Neighbours(5)
	3rd	Transplants (6)
Gardeners (4)		

<p>Q12: Have you been more involved in local/global politics as a result of participating in vegetable gardening?</p> <p>Yes: 6 No: 5 Opposite: 3 Not answered: 3</p>	1st	More Awareness (3)
		Food is always a little bit political: Do not think politics is the most effective way the change to occur: When you do something, you make a political statement (3)
	2nd	Local food movement (2)
		Made me more concerned about the environment and things such as pesticides ban (2)
		Food security (2)
	3rd	If I do something the way that I think is a good way to do and people see that that is good, then maybe they will change. That is my hope (2)
		More people need to know what it takes to grow food (1)
		Self-sufficiency (1)
		There has to be some kind of larger system change (1)
		Make my own compost (1)
Q13: Do you think participating in vegetable gardening activities has changed your view of agriculture, farmers or/and nature?	1st	Have more respect for the farmer: I have utmost respect for all of them, regardless of how they do agriculture (5)
	2nd	Got to know the reason why the food costs more: Willing to pay a little bit more (4)
3rd	The more that you are aware of what is happening in agriculture in the world, the more it affects your life: I see more hardships of the farmers. It is hard economically to keep going (3)	
<p>Q14: Over all, how do you think participating in vegetable gardening has affected your happiness and well-being?</p> <p>Positive: 17</p>	1st	I feel like I am doing something good: Good thing to do (5)
	2nd	We are so busy (4)
		If you know what you are eating, you feel healthy, better and feel like it is less impact on the environment (4)
	Feel happier when I am growing food: Gardening is happiness producing (4)	
3rd	Gardening gives you something to do (3)	

Q15: What concerns, if any, do you have about urban vegetable gardening in HRM?	1st	Soil Contamination (10)
	2nd	Cats (3)
		There is no enough space for people to grow vegetables, especially in the Halifax Peninsula (3)
	3rd	Food security (2)
		Farming is not a viable career option (2)
		Startup cost (2)
Q16: What suggestions, if any, do you have for improving urban vegetable gardening in HRM?	1st	More accessibility to community gardens (6)
	2nd	City wide compost/manure supply system (4)
	3rd	Change Zoning rules (3)
		Shared Greenhouse (3)
		Make a lease for community gardens (3)
		Establish a Co-op where people can share tools or supplies (3)

Table 2: Top three most frequently mentioned keywords by participants

Table 2 shows the top three most frequently mentioned keywords by different participants, categorized by each question. The bracket at the end of each keyword shows how many participants mentioned the same keyword for each question. Keywords were not always identically re-stated by participants. Rather, the researcher repeatedly read over the interview transcripts and attempted to discover the fundamental common themes for each question. Based on this table and all the information collected through interview, the real experience of vegetable gardening in Halifax is discovered and introduced in the next chapter.

Chapter 5: Discussion

Introduction

In Chapter 4, an overall picture of the participants' background and frequently stated key words or phrases were shown and concisely explained. In the next stage of the phenomenological study, the researcher has identified and introduces in-depth findings and stories discovered throughout the interviews. The preparation and steps taken to get to start writing this chapter was the most time consuming part of the research, yet the writing in phenomenological study is the most challenging. (Heidegger, 1953/1996) stated, researcher for phenomenological study should not be hurried and must contemplate. The researcher tried to dig deeper into the gardeners' words and phrases themselves and their interpretation in this chapter.

Discoveries

1. Reasons why participants started growing vegetables

This question was the first question to be asked, and therefore it was intended to make participants feel comfortable and break the ice between the researcher and each participant. In addition to that purpose, this question also helped the researcher to discover how the urban vegetable gardeners in Halifax grew their passion of growing food.

- **Gardening experience during their childhood**

10 out of 17 participants mentioned their experience of gardening during childhood as their main reason of why started growing own vegetables (Table 2). The researcher myself also recall that my interest in vegetable gardening, or food in general, was born and nourished during my childhood, when my mother always had a garden at home and took very good care of her flowers and vegetables. She often explained to me passionately how beautiful and wonderful her flowers and vegetables were. Participant P introduced her story during the interview:

My parents did [gardening]. I didn't really have much to do with it. I was forced to do it. You have to weed the garden. I kind of hated it, but my mom had a big perennial garden and my father was more

of a vegetable gardener. He had an orchard. So it is kind of in my blood. (Participant P, personal communication, March 3rd, 2010)

She mentioned that vegetable gardening was “in her blood”. In the past, she moved in and out quite frequently, and most of her previous residence was rented and therefore it was not always possible to grow vegetables extensively. However, she always grew some vegetables and mentioned, “When I got my own, I’ve always put some garden in. We rented a lot and we moved a lot. So it wasn’t normal to put in a garden. I almost always tried to grow tomatoes at least” (Participant P). In fact, participant P now runs an urban farm in Dartmouth area of HRM. She was very passionate in conveying her message throughout the interview, and the researcher myself was inspired by her enthusiasm for changing Halifax to more vegetable gardening friendly place. Participant D also had an exposure to vegetable growing environment when she was very young. Her parents were farmers and she recalled, “there’s an old saying that ‘farmers don’t eat what farmers don’t grow themselves.’ So my family believed in that philosophy quite strongly, and when I was a small child, most of the property was under cultivation” (Participant D, personal communication, February 12th, 2010). Participant H explained how joyful and fun it was to have a vegetable garden during her childhood:

I grew vegetables when I was very young with my mother in my backyard in California. We had a vegetable garden there, but it was just a carrot and little lettuce and it was more for fun... just enjoyment and good memories. Then I grew up with very nice flower gardens in my houses as a child. So when I became an adult, I wanted to continue that, so I grew flowers. And when I grow vegetables, I combine them with flowers. (Participant H, personal communication, February 18th, 2010)

The researcher could see by directly hearing these stories from participants that their childhood strongly affected their ongoing passion for gardening. Although only 10 out of 17 participants voluntarily mentioned this experience as their reason to start growing vegetables, more of them could have agreed if the researcher asked this question in Yes or No manner.

- **Gardeners grow vegetables because they want to**

Some readers may be wondering why these gardeners even bother growing their own vegetables when they can get presumably any variety of vegetables at nearby grocery store or local farmers' market. This research found that all of the participants grow vegetables because they are aware of several benefits in growing their own food, and often they simply love plants. Participant C explained:

I think mostly because I really love plants, and I really enjoy the activity, and then I think all of the reasons having to do with food came after. They came second. I learned more about growing your own food through gardening. But I don't think it's why I started. (Participant C, personal communication, February 7th, 2010)

She emphasized that she enjoys the gardening activity itself. Some participants did not realize their potential passionate for vegetable gardening until they started:

I was living in a small place, way out of middle of nowhere outside of Dartmouth. There was a plot of land beside the house that nobody was using, and I asked if I could garden. I brought in some organic soil and I started. I loved it. That was the beginning of something I was looking for what was my passion for outside of my work for many years. That's when I found it was then. (Participant M, personal communication, February 25th, 2010)

Participant K also thinks that vegetable gardening is fun activity. However, there were also some other reasons:

Half and half, one was just for fun. It's something that my mom used to do and that was fun growing up. And the other half is more for political or environmental concerns. It's something that I wanted to be able to do myself. (Participant K, personal communication, February 21st, 2010)

She says that growing her own vegetables was also something that she wanted to be able to do herself. This reason is further explored in the next section.

- **Growing own food was something that they want to do themselves**

As mentioned in the previous paragraph, especially in urban areas, it is so easy and effortless to get

vegetables to nourish you everyday. You could just go to one of your nearby grocery stores or markets, and the vegetables will be ready for you to be picked up. There is no need to wonder about where the vegetable was coming from, how much work was necessary to produce, how far it traveled to get to the store shelf, and so on. In North America, we may tend to take this availability of fresh vegetables for granted. However, participants of this research often had different perspectives in this matter and were paying extra attention to what they eat or intake everyday. Participant N had views that appear to be quite common among urban vegetable gardeners:

I think it's really interesting to grow your own food. I think it's really a good skill to have and a skill that more people should have. I support buying local foods, so what's more local than something that grows in your backyard or from the city. (Participant N, personal communication, February 26th, 2010)

She even expressed that being able to grow your own vegetables is a skill that more people should have. She was deeply concerned about the direction that our food supplying system is going, and she also strongly believed in the benefit of eating locally produced foods. Participant L had a similar view:

I've always wanted to have a garden since I was a little girl. They taste better. They are fresher, tastier, and you know what they are put on them. You can control it. You can build soil. I think it's something that should be done. (Participant L, personal communication, February 23rd, 2010)

For thousands of years, humans were living in hunting-gathering society. With our rapidly increasing convenient and distant-from-agriculture urban lifestyle, many of urban residents may be longing to return to grow their own food and the philosophy of hunter-gatherer society.

2. How does vegetable gardening affect your day-to-day live?

This question (Q2 in Table 2) was included in the interview to see if participants would state any social benefits or costs without being asked specifically. One of the main research questions of this study was: what are participants' opinions about the social benefits and costs of urban vegetable gardening? However, as interviews progressed overtime, the researcher recognized that social benefits and costs are

not the only factors affecting the garden communities' sense of community, which was the main focus of this study. Therefore this section introduces the whole aspects of how urban vegetable gardening could affect your day-to-day live.

- **Give a place for urban residents to relax**

This was the most frequently mentioned keyword for question 2 of the interview (Table 2). Five participants expressed this effect during the interview. Participant G said “In every way. I love being in my garden. I feel like when I’m out there, I just feel relaxed in the way I don’t feel inside” (Participant G, February 16th). Gardening requires you to be outside. In urban lifestyle, especially in densely populated area, there may be less attraction or reasons to keep you stay outside, but gardening could turn this around. Participant D described this effect in a unique way:

Psychologically I can definitely say it’s a huge plus to be able to go out and take your regression out on weeds and, you know, it’s very physical, so it’s good exercise. And they’ve shown there is a link between physical activity and mental health now. You are doing stuff with your hands a lot, and it improves your mental state. It releases endorphins. You feel good. You are out in the sunshine and, you know, to me it’s a form of exercise that I feel good when I come in and bath and collapse. So that’s good. (Participant D, February 8th)

Gardening lets you not only stay outside, but also gets you moving. Participant K (February 21st, 2010) introduced the potential therapy effect from gardening by saying “psychologically I find it’s really calming. Some people talk about it as therapy and that’s actually true for me. I visit my garden and feel better after” (personal communication).

One of the reasons why gardening activity is relaxing may be due to the fact that you interact with soil, earth, and the nature. Taylor (1998) describes this phenomenon in a poetic way: “our bodies are made of the same elements found in healthy soil and seawater, so it is nothing short of a homecoming when we touch the earth. Best we should do so reverently, because the earth sustains us” (p. 4).

Vegetable gardens could also act as oasis in urban areas considering the fact that most roads in cities,

at least in Canada, are paved over.

To conclude, vegetable gardens therefore could also function as a relaxation spot. Locating a vegetable garden on urban land may not be economically justifiable, but we need to be aware of the fact that once the garden space is paved or turned into buildings, it is very difficult, if not impossible, to bring back the land to the pre-condition. Participant C is concerned about this situation clearly:

I think there does need to be protection for that land because the system we have set up right now of, you know the capitalist system is that farmers need to be able to it. And pay their bills... So it's more profitable for them to develop them than to farm. It can't be on their shoulders to not sell that land. That's too much to ask of someone. The farmland is way more valuable as development as it is as farmland. But we have such a small amount of good farmland that once it's gone, it's gone. I don't think there's an understanding of what that loss means. (Participant C, personal communication, February 11th, 2010)

The reason why this research selected qualitative approach, not rigorous quantitative economics approach, is here. These unquantifiable benefits need to be incorporated into cost benefit analysis when urban municipalities decide whether to make a development on existing undeveloped lands. Urban residents need places to relax and calm down. The result of this section has indicated that urban vegetable gardens have a potential to provide the space for those functions as well.

- **Vegetable gardening can give you a sense of satisfaction: feel good about yourself**

This was one of the second most frequently mentioned keywords for question 2. Feeling satisfied would certainly feel good. Participant H (February 18th, 2010) said, "For me, going to a community garden really fulfilled my desire to plant. And also I met a lot of people there in the community. Physically it's wonderful. In so many ways gardening can fulfill the person" (personal communication). Moreover, several participants expressed that they feel like they are doing something good. Participant M (February 25th, 2010) explained why: "I also feel much better about the environmental impacts because I am not transporting it thousands of km. There are so many things like that from the environmental prospect that I

can feel good about it” (personal communication). The researcher contemplated and realized that one of the reasons why gardening can fulfill the person’s sense of satisfaction is due to the fact that he/she is involved in the whole process of growing vegetables. Anyone must have the experience of feeling satisfied about doing something yourself, whether or not it is related to growing food. In any case, sense of satisfaction or fulfillment was one of the keywords for the effects of urban vegetable gardening.

- **Create opportunities to meet people who you would have never interacted with otherwise**

This was one of the key findings throughout this research: vegetable gardening makes you deal with people who you would have not interacted otherwise. Participant O told the researcher an example that occurred in Bloomfield community garden. City residents consider the area around the garden as not a very safe place. She was a coordinator of the garden when the incident occurred:

The location of the garden is very diverse demographic in that neighborhood from homeless people to middle class and artists and students and all-timers. On that corner, there is that sitting area, and in that sitting area there is a group of old men who are homeless alcoholics who sell things. Some of them have serious psychological... who knows. On a number of occasions, I’ve gone to the garden and some of these people have been in the garden poking around. There were a couple of situations where people were really high on drugs and they were delusional a bit. They were very strange. At the same time, there was people from the Bloomfield that some of the gardeners coming to there. All of a sudden you have this interaction of people that don’t usually interact. But there is a garden there, so there is something to do, and a job to give people. (Participant O, personal communication, March 2nd, 2010)

New interactions of people naturally emerged in and around the garden, according to her statement. In urban areas, since the population density is relatively high compared to rural areas, it is natural to run across several strangers in any location, as explained in Chapter 2. Therefore, in some way urban residents have to be selective in terms of who they want to interact with. Under that circumstance, homeless people or people on drugs and alcohol addiction may tend to be marginalized and avoided by certain groups of

general public. Gardens, especially community gardens where people gather from varieties of personal background come and work together, could be a place to create a new community or sense of community. Participant B (February 3rd, 2010) introduced his touching story. During the summer of 2009, almost everyday he saw two elderly women walking the driveway running perpendicular to his garden. One day, they came to knock the door of his house and asked him if they could sit on a wooden bench that he and his housemates built in the garden. He gladly offered them the bench for resting and enjoying the aesthetic beauty of the flowers and vegetables in the garden. He noted that in the past, he would not normally interact with people in their cohort on day-to-day basis. Hence, his garden acted as a bridge to connect the two islands. To conclude, this section introduced a potential of the garden that it could bring people together, who would have never met or interacted otherwise. The boundaries of age or socioeconomic background seem to be non-existing in the vegetable garden space.

- **Vegetable gardening is a continuous learning process**

Gardening takes time and continuous learning. The more experience you have with gardening, the deeper your philosophy of gardening may become. Participant I expressed the uniqueness of vegetable gardening as a learning subject:

Growing food and farming is very interesting for that perspective because there are in some ways no text books that you can read and know exactly what to do. It's different for everyone based on their style. It's different based on their soil. Even 5 km apart, two gardens could function completely differently. So it's exciting in that way because you can experiment, study take advice from others but in the end it becomes really personal. (Participant I, personal communication, February 18th, 2010)

Although there are quite a number of guidebooks and textbooks being published related to vegetable gardening, as participant I mentioned, there is no single right way of growing vegetables. Each person and land has unique personality. Participant D mentioned that vegetable gardening for her is a wonderful science experiment:

To me it's also a great science experiment. I was an English major in school. I was a total arts person. I didn't any plants science course, so for me it's like a whole other education, like a university course. I'm out there, learning about plants, cycles of the moon and you know, stuffs that I never... it's whole other world of learning for me. (Participant D, personal communication, February 12th, 2010)

She pointed out in this statement that vegetable gardening could be used as an education tool. This is consistent with the finding from literature review in Chapter 2 that vegetable gardening was in fact incorporated into school program during the period of School Gardens (1900 – 1913) in Canada (Martin, 1998). This potential for currently existing public schools in Halifax is introduced in later section.

3. Social benefit and cost of urban vegetable gardening

This was one of the three main research questions. Since the style of the interview was designed to be open-ended, participants provided a variety of unique answers. First of all, the majority of people expressed that there was no social cost to urban vegetable gardening. However, this research was not designed to prove any statistical evidence, but what the researcher tried to discover was more in-depth thoughts of the vegetable gardeners themselves. In fact, there was only a few key words or phrases that were repeated by several participants.

Benefits

- **Sharing of resources**

One key finding from this question was that gardening, potentially vegetable gardening in particular, could work as a facilitator of building sense of togetherness in the surrounding neighborhood. One potential reason for this effect may be one of the natures of gardening practice, which is sharing of resources. The shared resource could be a helping hand, knowledge, transplants, harvests or even stories. Participant N explained her own thoughts:

It's just fun getting to meet people and skill share. You are talking to someone about some things and they know a lot about it but you know a lot about something else. So there is a lot of learning from

other people. (Participant N, personal communication, February 26th, 2010)

Sharing of stories is done all the time in our daily lives. However, there seems to be something special about the act of story sharing among vegetable gardeners. Participant D described how generous her gardener friends are:

If you are really into it, you almost instantly have a whole bunch of friends that you know you share this passion with, and you know they are out there doing crazy stuff in the garden. You can see where everyone is, or they are doing their thing. It's a funny little sense of community within the city. It's a great resource, too. Gardeners I find are the most generous in terms of sharing knowledge. It's like free knowledge, right? They are not charging for telling you. I can't believe how generous they are with others. (Participant D, personal communication, February 12th, 2010)

Several participants told the researcher about the generosity of vegetable gardeners in general. The researcher myself also discovered the generosity and openness of the gardeners throughout the interview phase of this study. Participant Q said how pooling of resources with neighbours could expand the possibility of urban vegetable gardening:

I like the pooling of resources together and if you only have a space to grow one thing, you can group with someone that grows something else and you can share them. That to me is the community. Sharing what you grow. It's a common topic of conversation, so no matter what social background you come from, you have that common topic to discuss. (Participant Q, personal communication, March 6th, 2010)

His last statement will lead us to the next finding of this question.

- **Gardening gives you a topic to talk about with neighbors**

In urban neighborhood, people tend to respect their neighbors' privacy. Their daily schedule often varies. Moreover, they may not have many things to talk about, due to the lack of common or shared experience. As mentioned in Chapter 1, in modern society, meeting directly and having conversation is not our only way of communication or establishing a community. You can talk on mobile phone while you are outside, or chat online virtually anywhere there is an access to the Internet. Therefore, interacting with

neighbors may not be a necessity for everyone. However, urban vegetable gardeners have indicated throughout the interview that having a good connection with neighborhood benefits not only the gardeners themselves, but also the entire surrounding community. Moreover, they argued that gardening activity could help bring neighbors together by providing a common topic to talk about. Participant A told his own experience of crossing the age boundary and establishing a deeper connection with one of his neighbors:

Because I spend so much time there, because my neighbors see me out there and it gives some form to talk about, I can talk with my neighbors. For example, one neighbor is in her nineties and I am in my twenties, and I am a male and she is a female, so there shouldn't be really any place for us, common ground. But gardening gives us that space. From there, we can talk about other things. It used to be superficial conversation. Deeper connection. (Participant A, personal communication, January 29th, 2010)

Participant D also explained how growing her own vegetables expanded her network in her neighborhood:

Since I really started gardening in the city maybe two or three years ago, we talk about vegetables probably more than any other subjects. My neighbor Barbara next door, she always asks, "oh when are you going to get started" and she even can see my sun porch window and sees the seeds growing. She's like "those tomatoes look like ready to go." What else would we talk about? Again she's probably in her eighties and I don't know too much about the rest of her life and her kids and stuff. There's always something to talk about. (Participant D, personal communication, February 12th, 2010)

What was discovered throughout this question was that vegetable gardening could remove the boundary between younger generation and older generation. This potential could be a significant benefit for communities where the age demography in the neighborhood is diverse, yet there is few or no personal interaction among residents of different age groups. As hearing stories from our grandparents are always fascinating and inspiring, deeper connection with older generation in your neighbourhood may give you and every member of the neighborhood a special benefit.

Costs

- **Takes some of your time away**

Vegetable gardening takes time regularly, although the amount of necessary work would depend on the scale of the garden and each season. Although all the participants expressed that they enjoy spending time in their garden, a few participants listed this aspect as a social cost in urban vegetable gardening.

Participant G explained:

I don't see this necessarily as a problem, but I'm a studio artist, so I teach at the art college. I'm a studio artist and I'm a parent. So that's plenty, and adds a gardener onto that... Sometimes I feel like if I didn't tend my garden, I had more time for the other things. (Participant G, personal communication, February 16th, 2010)

Participant L mentioned that it was not herself but her family member who wanted her to spend time for something else:

People around definitely saw me enjoying this. I think my husband would have liked me to spend less time for sure. He wanted my help. He was a university professor, and I could have helped him more with his research. (Participant L, personal communication, February 23rd, 2010)

Although this was mentioned as a cost, no one participant initially talked about cost, but rather tried to recall if there was anything socially negative about growing vegetables in the city. However, as the next section explains, some participants talked about the potential problems that could occur in community gardens.

- **Potential problems in community gardens**

Allotment garden and community garden are sometimes considered identical, hence here they are both called community garden. In both types of gardens, gardeners stay next to each other and grow vegetables in a collective land. The only difference is that in allotment gardens, gardeners get their own plot, whereas in community gardens, people all work together on a same piece of land for collective harvest. In this section, some of the potential negative consequences about community garden are

introduced. Some of the answers provided were not specifically responded to question no. 3, but they were introduced during the interview period. Participant D explained a problem that she encountered after starting to grow potatoes in a community garden:

One thing I didn't know was that, you were not allowed to use pesticide on your crops, which is great. But the problem was, if you don't spray potato beetles, what would happen was, because plots were so close together, if one person gets infestation of potato beetles, and they weren't there to pick them off every other day, it would spread really fast. So my potatoes were just gone. Some people are sloppy, and you are not, and you are in that community situation. Now your problem is my problem. (Participant D, personal communication, February 12th, 2010)

When you share something, you must respect the norm that others should get the same benefit as you do. In other words, you should not do something that will be harmful to others. Participant J described the issue of free riding problem:

With any community activity, you need to have communication very clear, and boundaries about who's involved and who's not. That's the free riding issue. If anyone can walk through the garden space and get tomatoes and eat them without having to contribute to the work and effort, that's not really going to benefit the social cohesiveness or social capital. (Participant J, personal communication, February 28th, 2010)

Every group activity involving sharing of resources could cause some form of conflict, and community garden was found to be no exception for this phenomenon in this research. Participant M explained why he is currently not involved in community gardening:

There is a community garden in my neighborhood, but I am not involved with it. But I have a good friend who is, and that does happen. Everyone has her own idea about how our garden should be, and everyone has their own opinion about how much space they should have, how much effort they have put into compared to somebody else's, so there has been some conflict and fairly serious conflict in that community garden. Everyone brings their own personality, and as soon as you get more than a few people in a room doing something together, those things are going to come out.

Community garden is no exception. I think people just bite their tongue a lot. They don't say anything unless it's good. They tolerate people's idiosyncrasies and enjoy their gardens as much as they can. But there is more conflict for sure. If I had more time, I would probably be involved despite that, but it really is something that I considered to be, make me resistant to join in that group. Gardening should be something that's really good. (Participant M, personal communication, February 25th, 2010)

Lastly, participant C had an experience that is worth introduced here:

When I gardened at the Gorsebrook in the South end, I felt like... I didn't feel unsafe at any time, but I definitely didn't feel comfortable. And at a lot of the times that came from the gardeners themselves, where they were kind of a little bit weary of people in their garden. And so when I showed up, they didn't trust that I should be there, which made me just kind of feel little bit like... (Participant C, personal communication, February 11th, 2010)

She did not feel comfortable staying in the garden because she felt like other gardeners were not welcoming her. In otherwise, other gardeners in the community garden was already forming a strong community within the garden, and the nature of the group was quite exclusive.

To conclude, from the interviews the researcher discovered that community gardens could have some problems if they are not well organized or operated without provision of any concern sharing opportunities, such as monthly meeting. However, these potential negative effects of community gardening are also prevalent in any situation that could result in the tragedy of the commons. Furthermore, they were the only costs that participants could think of for urban vegetable gardening.

(1) How do urban vegetable gardeners define community and sense of community?

As described in Chapter 2, there is no single definition of community or sense of community. Therefore, the researcher was interested in exploring how urban vegetable gardeners define community and sense of community based on their vegetable gardening experience in Halifax. The question no. 4 and 5 were specifically designed to discover the question (Table 2). Participants were asked to describe any

words or phrases that would come up in their mind when they think about community and sense of community. Results are provided below.

- **Concept of sharing is the most key element for both definitions**

The most frequently stated keyword for both community and sense of community by participants was “sharing” (Table 2). This is consistent with the definition of sense of community, which was introduced in Chapter 2. Participant G expressed that sharing is one essential part of gardening activity, and it is one of the ingredients of community in general:

My first thing would be just being part of the social network because it’s not... I think some communities have closed edges, like you might belong to a church community, for example, that’s just the people that belong to that church. But something like a garden, it doesn’t have any boundary. It’s like a prismatic structure. So I think a garden community is like that. I think the other part of it, which is really strong with gardeners for whatever reason, is the idea of sharing. It might be knowledge, it might be seeds, it might be plants, it might be just experience. (Participant G, personal communication, February 16th, 2010)

No boundary – one nature of gardening activity in general – is part of the concept of community, according to her statement. Participant P (March 2nd, 2010) mentioned that one of the key elements of community is “sharing of skills, whether be from old people that have things that need to be transferred, which are getting lost” (personal communication). Participant A described how working together with other gardeners one day made him feel comfortable to live in Halifax:

Security and sharing. I had one experience where I went to somebody else’s garden. That was pretty cool because at that garden, there was a bunch of people from all over the city helping out for the day. Not a physical community but more of a broader sense of community. We all shared this enjoying the day and helping each other. We were all comfortable with each other because of the garden space. It was pretty loose. It also enhances the sense of community and made me feel more comfortable to live in Halifax, because I am not from here. (Participant A, personal communication, January 29th, 2010)

It is not obvious from this study whether sharing became part of the essential factor of community or sense of community after the participants started vegetable gardening. However, one key finding was the fact that more than half of the participants (13 out of 17) indicated that they got to know their neighbours better since they started growing their own vegetables (Table 2). Therefore it could be noted that the vegetable gardening activity broadened gardeners' geographical community around their garden, and therefore provided more opportunities for sharing. Next, we will focus on each definition and introduce how gardeners perceive of them.

Community

● **Togetherness**

Togetherness was the second most frequently mentioned keyword for definition of community by participants. Participant C explained how gardening activity could bring people together, people who may not have anything in common before sharing the garden space:

When I think of community, I often think of people who are living in a same, similar area of a town or city, who don't necessarily have a lot in common, but have built relationship. It's for me a lot about people coming together and finding common ground, not necessarily starting with common ground, and kind of taking responsibility for each other and their neighborhood and their land and that kind of stuff. (Participant C, personal communication, February 11th, 2010)

Her response to this question brought up a few new findings. First, it was discussed in Chapter 2 of this study that there are mainly two different kinds of community: geographical community and interest-based community. Her response included both types of definition, and explained how sharing of responsibility through gardening together could help build up an interest-based community on top of the already existing geographical community. Second, gardening could bring people together because as participant L (February 23rd, 2010) also mentioned, gardening provides a space for people "(...) who identify themselves as belonging together for same reasons" (personal communication).

Sense of community

● **Geographical sense of community**

Some participants were aware of the distinction between geographical and interest-based sense of community. One participant mentioned that her definition of sense of community changed since she started vegetable gardening:

I used to think of community as more geographical... people who live in the same neighbourhood, who live in the same area. Now I think of community as people with similar interest. They don't maybe live in the same place but they are all interested in gardening. They all share a garden space. Even there is a mailing list in Halifax for gardeners. I am sure it's not just for people in Halifax but also for anyone who wants to join. (Participant N, personal communication, February 26th, 2010)

She pointed out the fact that often gardeners with similar interest or perspective live in different neighborhoods, but they still share a gardening space. She now thinks that sense of community is formed more with people who have similar interest, rather than with people who geographically live around her residence. The researcher is discovering here that gardening could enhance both the geographical and interested-based sense of community, as she indicated.

5. How does urban vegetable gardening affect the gardeners' and their neighbours' feeling of safety and trust?

Feeling of trust and safety is one of the key elements of sense of community (Appendix A). The researcher asked participants if their and their neighbours' feeling of safety and trust has changed because of vegetable gardening.

Feeling of trust

8 participants said yes, 5 participants said no, and 4 participants indicated that vegetable gardening did not affect their feeling of trust (Table 2). Participants' answers to this question did not have significant similarities among each other. By introducing varieties of their insights here, the researcher myself learned the whole aspect of trust being created through urban vegetable gardening.

- **When you share things that you grow in your garden, your neighbors will learn to trust you**

The concept of sharing has been mentioned a number of times already in this chapter. Hence it is starting to become clear that urban vegetable gardening somewhat fosters the mind of sharing in gardeners' mind. Furthermore, two participants indicated that the act of sharing has increased gardeners' and their neighbors' feeling of trust. Participant M mentioned:

When you open up and invite people to your home, share the things that you grow in your garden, they learn to trust you. We have great neighbors. We have grown to know neighbors more and more anyways. We trust more and more because we help each other out. There are good times and bad times. Not that we've become really good friends, but just we are really good neighbors. There is no neighbor that I can say "I wish there was someone else there." None of that kind of person. The garden definitely opens that up even more. When you take something you grow and something from your hands and share them with somebody, that creates trust, too. (Participant M, personal communication, February 25th, 2010)

Growing your own vegetables means you get harvest, and oftentimes you harvest more than you can eat. What happens to these extra harvests? Gardeners share them with others. Participant M made this point clear. Participant Q introduced how his vegetable garden could enhance his trust with his neighbor:

One neighbor who lives next door to me, I went on vacation last year during the summer, and some of my plants were producing a lot of food at that time. I told that they would be welcome to come into my backyard and take whatever was right and ready to go. So he came over several times while I was gone. That's an element of trust, inviting someone into your yard and say "anytime you want to come over and help yourself". (Participant Q, personal communication, March 6th, 2010)

He shared not only his produce but also his gardening experience with the neighbor. This may be considered an act of reciprocity. To conclude, these participants' stories show that urban vegetable gardening could also act as a facilitator to create trust among gardeners and their neighbors.

- **Existence of garden means that people living there have a pride in where they live**

Whether a garden grows vegetable or flowers or any kinds of plants, it contributes to higher feeling of trust for some gardeners, including participant K:

I think I feel more comfortable in the neighborhood with gardens because it conveys the sense of people care about their home that means something to them. Maybe other people feel that way, too.

But if there is a garden, that's a sign for me that whoever lives there loves where they live.

(Participant K, personal communication, February 21st, 2010)

Throughout the interview, the researcher myself was inspired by the participants' expression of love toward their vegetables, their garden and their land. As participant K explained, all the participants take a good care of their soils, grow vegetables organically and value the relationship with their neighbors. Vegetable gardens could therefore again potentially create or enhance feeling of trust around their neighborhood.

- **Loss of trust caused by stealing of harvests and vandalism does not outweigh the increased feeling of trust**

A few participants mentioned that their produce was stolen. However, they did not indicate that it decreased their feeling of trust in their neighborhood. Participant C hopes that someone who stole her vegetables enjoys the food:

I found certain vegetables stolen. There were certain things I think that are more tempting than others.

I grew pumpkins once in the South end of the Community garden. And every time if the pumpkin was green, could have not seen it, and as soon as turned orange, people wanted the pumpkin. I got

one pumpkin out of five, and that felt like enough. In the Bloomfield garden my tomato was sad. So I think I only got three tomatoes. I didn't get any of them. They were gone, but I kind of feel like... I

just hope that people enjoy the food, is all. I hope that they ate them. (Participant C, personal communication, February 7th, 2010)

It was not only participant C who thinks the same way and has the incredible generosity:

If the garden is vandalized or something is stolen, it's not the people who are gardening in it. To be

honest, I don't really mind having vegetables stolen because I think if somebody is stealing vegetables, they probably need that. So somebody stealing vegetables, they can have them because I am not food insecure. I think the process is most of the fun. Planting everything and watching it grow and yet, it's great to eat the vegetables at the end of the season, but that's only one part of the whole process. (Participant N, personal communication, February 26th, 2010)

Participant N emphasized in answering this question that enjoying the fresh taste of her own harvest is only one part of enjoyment in vegetable gardening. It is the whole process - preparing good soil, planting seeds, taking good care of plants and seeing them grow, meeting new people through the garden – that gardeners enjoy and appreciate. At the same time, some participants were surprised and impressed how few or none the stealing happened in their garden. Participant H explained:

Because we don't have a fence around our garden, it's open and people walk through and few people do take some things. But I was surprised how few. I was surprised because I grew some beautiful tomatoes. I was afraid that half of them would be gone. It did happen sometimes and I wasn't too worried about it because I had plenty to share enough. But it was an issue and we talked about it in our meeting, what people should do. We talked about putting up a sign but we wanted to be friendlier than that. (Participant H, personal communication, February 18th, 2010)

Based on their statements, the researcher feels that concerns of stealing of vegetables or vandalism should not hinder the local government's action of promoting urban vegetable gardening in Halifax. In fact, as explained above, existence of community garden in neighborhood could increase the feeling of trust, and therefore potentially benefit the neighbors' sense of community.

Feeling of safety

This question specifically tried to investigate if having vegetable garden in the neighborhood could change gardeners' and their neighbors' feeling of safety. Out of 15, 12 participants expressed that they feel safer in their neighborhood, and 3 participants indicated that there was no change in their feeling of safety because of their vegetable gardening experience.

- **Urban vegetable gardeners play the role of watchdog**

The most frequently repeated response for this question was that participants felt they were staying more time outside for gardening activity, and therefore were more aware of their neighborhood. In other words, they acted as a watchdog. Participant D introduced her own perspective during the interview:

I'm out there so much that in the summer, I'm out there all the time. I'm hardly ever inside, right? So maybe that's a good thing for them [neighbors] because in a way they go on vacation and I'm still there, and I'm seeing what's going on in the neighborhood. So if I see some strange person sniffing around the property, I'm suspicious. So maybe it's a good thing that way because kind of like the watchdog. It's more like an awareness of what's going on. Anytime you spend a lot of time outside on your property, you are just going to be more aware of your surroundings and what's happening and, you know, you notice "oh that person is putting new windows" or "that person got a new car" or, so I find I am more connected with the neighborhood probably in a positive way. (Participant D, personal communication, February 12th, 2010)

This statement indicated that she is more aware of her neighborhood because she stays outside more often. In urban neighborhood, having a garden in your backyard could give you more reasons to stay outside, and it therefore gives you more chances to be aware of what is happening in your geographical community. Also if you are outside often and know neighbors well, as participant M mentioned, criminals are less likely to target you (Participant M, February 25th, 2010).

6. Does urban vegetable gardening activity change gardeners' frequency of social interactions with particular groups of people?

As shown in the theoretical framework of this research (Appendix A), change in the quality of social interaction was considered as main element of change in the perception of sense of community by gardeners. The interviews asked participants if they have interacted more, or less, with particular groups of people. 12 participants in total answered this question, and 8 participants indicated vegetable gardening

enhanced their social interaction, 3 participants said there was no change, and 1 participant expressed that he was not sure if gardening activity affected his social interaction in any way (Table 2).

- **Vegetable gardening gives you new opportunities to interact with people who you would have never met otherwise**

This was the most repeated response to the question (Table 2). It appeared that gardening activity, vegetable gardening in particular, has unique potential to bring people together, people who otherwise would never meet or interact in their urban livelihood. When Participant F was asked this question, she recalled that she had a unique social interaction through her gardening experience in a community garden:

I would definitely not be associating with South End dwellers if it wasn't for this garden. It's just I don't live there and it's different flack of society that I normally interact with. And it's sort of parents of my friends' kind of thing, and their children and their grandchildren kind of thing. Also there is a lot more children in South end than in North end, I've noticed. More students live up here. People are younger and they are maybe single. (Participant F, personal question, February 15th, 2010)

She mentioned that she interacted with people from different flack of society when she was around the community garden in South End area of Halifax Peninsula. The demography of South End area is somewhat contrasting from that of North End, where residents are younger generation and filled with art and music culture. Participant O (March 2nd, 2010) said, "I deal with people that are not just my friends. I definitely deal with broad range of people" (personal communication). It was discovered here that some vegetable gardeners are aware that they have expanded their social network because of the gardening activity. In addition, participant C noted that she was able to make the relationship with work colleagues into more informal, casual one:

There's people who garden there from organization, so then I feel like my work had its whole community because we have garden plots together, and all of the sudden we are talking about both of our work and how we can work together through our organizations, and opens up formal avenues to really informal moments. (Participant C, personal communication, February 18th, 2010)

Her experience implies vegetable garden's capacity to bring people from different organizations together and act as a catalyst for collaborative projects in the future.

- **Engaging in vegetable garden activity decreased the amount of total social interaction**

Although no participant indicated that he/she interacts less with any particular group of people, one participant mentioned that her total interaction with others decreased because of the gardening activity: "It hasn't changed my interaction. I think it has decreased my total interaction with people because I am spending time doing that, instead of spending time going to meeting and anything like that" (Participant L, personal communication, February 23rd, 2010). She was one of the two participants whose age group was in the highest category of the questionnaire (Figure 1). Therefore this phenomenon may potentially be due to the fact that as humans age, the amount of physical activity reaches certain limit everyday relatively quickly. Furthermore although it depends on the size and seriousness of their garden, working in the garden takes away some of their energy. However, this would not be necessarily a negative phenomenon, since the several pieces of research have shown that working in the garden improves elder citizens' mental state (Pretty, 2005).

7. Does urban vegetable gardening encourage the act of reciprocity?

Reciprocity was considered as another key element of sense of community (Appendix A). Question no. 11 of the interview was design to examine if urban vegetable gardeners exchange information or items related to gardening with others. Results were categorized into two sections: what items or information and with who participants exchange. The most commonly exchanged item was seeds, followed by harvests and transplants respectively. Participants most often exchanged their items with friends, followed by neighbors and families accordingly. All participants gave their vegetables in some form (seeds, transplants or harvest) to others, and often they received something in return, which is the act of reciprocity. Participant H told a story of her friend offering her transplant:

There's a woman who has a plot, and she's from Vietnam. She grew kale and told me that they grow

a lot in Vietnam. It's antioxidant. I learned a lot about that, so one day she came over to my plot and said "would you like my kale? I have too much." She brought me all these little starter plants, and turned out my big corner of my garden became kale. (Participant K, personal communication, February 18th, 2010)

They had an exchange of both item (kale transplants) and knowledge (kale is a popular vegetable in Vietnam). As mentioned previously, vegetable gardening offers an opportunity to give something to others, since oftentimes gardeners harvest more than what they need. Therefore, growing vegetables in the city could create more chance of reciprocal acts among neighbors, which could affect their sense of community positively. Participant O delicately described her thoughts about vegetable gardening's capacity to make people generous:

Another really important good thing is that they have things to give away. Having this surplus to be able to give to people. You hear that a lot that people talking about other people's gardens or neighbors or whatever. They have extra tomatoes from there, and so on. Because they have some extra thing, they can afford to be generous and give it to their... That's material as well as social benefit. It's so nice to be given something and it's even nicer to give back. Even if it's flowers or something, even one thing of cherry blossom, you can bring as a present as you are going to visit somebody. You always have a present you can bring from your garden. You can always bring one thing of beauty, which is so personal and so beautiful. And it doesn't cost you anything, which is really important too for a lot of people. (Participant O, personal communication, March 2nd, 2010)

She indicated that vegetable gardening gives you both material and social benefit. You will receive material benefit by having produce, which saves you time and cost of buying vegetables at grocery stores, and you will also receive social benefit by having extra harvests so that you can give others as a gift, which could initiate the act of reciprocity. Based on the responses to this question, the researcher found another benefit of having vegetable gardens in urban area: vegetable gardens can act as an impetus to encourage reciprocal activities in the surrounding neighborhood.

8. Effects of urban vegetable gardening on political engagement of the gardeners

In Chapter 2, it was mentioned that urban vegetable garden could make gardeners and their neighborhood more politically active, since vegetable garden could bring the neighbors together through common visions and goals. Question no. 12 explored whether it was in fact held true. In total 14 participants responded to this question, and 6 participants said they are more politically active since they started growing their own vegetables, 5 participants indicated the gardening activity did not affect their magnitude of political engagement, and 3 participants mentioned that it was indeed the opposite: they became less politically active after growing their own vegetables. According to these results, there was no strong correlation between the rate of political engagement and the act of growing vegetables in urban area among participants. Following paragraphs introduces some of the notable responses given by the participants.

- **Growing food is always political**

Every individual would have different motives or reasons to grow vegetables in his/her urban livelihood. Some may grow vegetables because they want to eat healthy and do not want any pesticides or herbicides on their vegetables, some may not want to rely their diet on the industrialized large-scale intensive agricultural system, and some may want to build a better sense of community in their neighborhood. Participant O explained why food is political:

My parents grew vegetables and I learned early on that there was a lot of political power on your dinner plate. Where you buy it from, where it's grown, how far it's traveled, the chemicals, and self-sufficiency versus dependency and economics. Your dinner plate has a lot of political power. If every dollar is a vote, three times a day. (Participant O, personal communication, March 2nd, 2010)

We all need to eat food to live and survive. We need to get food from somewhere. She emphasized in her statement that our choice of where and how we acquire our food is always political and it affects the natural environment. According to her statement above, it appears as if you are voting for the process of growing food three times a day, every single day. Participant M told how he became less involved with

advocacy oriented political movement but still empowers people by doing what he thinks others should be doing:

I am not associated with any political body or movement or anything like that, but when you do something, you make a political statement. When I talk to people about organic gardening, I am saying I don't agree with the use of chemicals and pesticides that kill everything. The people whom I talk to talk to someone else. The organic movement moves because of that, and that's a political statement. That's a political course, same with growing your own food and buying locally. It's all because we know the value and we are concerned about the environmental effects of transporting things for miles and miles. So we want things to be better in our communities, so we garden. We make compost. We talk. Those are all political things. I thought about this a lot over the years. I don't think politics is the most effective way the change to occur. In fact, I think it's the opposite than powers that be of the vested interest and keeping the way they are, not changing the way they are. So I became involved with Green Peace. I lived in Vancouver and worked with several environmental groups. I worked with a First Nations group fighting for land claims and things like that. What I discovered was that people want those things, but people are people and they come with their personalities and their flaws and even their dysfunction. So those movements I do not feel was the right thing for me. I preferred to become much more basic example, rather than go out there and try to convert people from what they are. If I do something the way that I think is a good way to do and if people see that that's good, then maybe they will change. That's my hope. (Participant M, personal communication, February 25th)

He used to be what people would call an environmental activist, and fought for the change by advocating to the large political system. However, along the way he realized that it was not the best way for him to make change, and instead determined to be the real example of what he wants everyone else to be. The researcher was truly inspired by his life approach and the path that he has been taken. To conclude, this question discovered that growing vegetables itself is a political statement, although many participants did not expressed themselves as politically active citizen.

- **Urban vegetable gardening makes gardeners feel like they can make a change**

This was one of the most significant and unexpected findings from this research. The researcher myself was in some way pessimistic about the power of individuals to make any big change. All the environmental degradations that became aware through my university education seemed almost unsolvable by my single act. I did not feel like I could solve the problems that all the human beings are facing. However, according to participant K, engaging in urban vegetable gardening can change this dire view:

We can sometimes feel that we are out of control with a lot of things. We just go along with the way they are. Gardening is really great because it makes us feel like all of us individuals are community and we can do things and change things together. (Participant K, personal communication, February 21st, 2010)

Her view introduces us to the philosophy that if every one of us feels like we are part of the community, we can believe more strongly that our act can change things better. This statement is in accordance with the literature introduced in the Chapter 2. When she realized this optimistic attitude in her mind, she started spending more work on community building and less of advocacy activities.

9. Does urban vegetable gardening affect gardeners' perception of agriculture, farmer and/or nature?

This question was designed to explore the urban vegetable garden's potential to raise awareness of the current issues surrounding agriculture and their impact on the natural environment.

- **More respect for the farmers**

The most frequently stated response to this question was that gardeners felt more respect for the farmers after the experience of growing their own food. Participant M described how he respects all the farmers who have been working so hard to bring food for us:

The farmers that I have met are all very well intended and they work so hard, so long, no breaks, and

very little financial compensation because they feel good about being a farmer. Some of them are misled and mis-educated by chemical companies and governments who have interest in selling these chemicals. We've just gone down the wrong road. But I've never met a farmer that I didn't think was assault to the earth. That kind of commitment to stay on the land when they could move to the city and become corporate executives and make millions of dollars a year... They are scraping by making food for us, and I have at most respect for all of them, regardless of how they do agriculture. (Participant M, personal communication, February 25th, 2010)

Most participants appeared to have experienced some hardship through the process of growing their own food. Some of the participants have also mentioned how their perception of how much food should cost changed, which will be discussed in the next section.

- **Experience of growing your own food makes you rethink how much your food should cost**

Several participants described how their perception of pricing of food, especially organic food, has changed since they experienced growing their own food. Participant Q explained why he thinks organic should cost more:

In the grocery store you see organic produce as a higher price, but you learn how much more difficult it is to grow things organically. You have to be much more persistent or careful about pests. You have to be more vigilant, especially when growling broccoli. So growing my own food makes me much more aware of the difficulty of growing organically. So I know the reason why the food [organic produce] cost more, because it's harder to do and take more time and interaction. (Participant Q, personal communication, March 6th, 2010)

The researcher myself experienced organic agriculture in the summer of 2009 for the first time in rural parts of Japan. Every day I woke up 5 in the morning, biked to nearby vegetable farm plot and picked reasonably grown green peas, put them into basket in right order, checked if they were not eaten by pests 'too much', and finally measured them and packaged for delivery. When the packaging was finished, the farmer asked me: "If you can put any price on that bag of green peas, how much would you say?" I said

“about 300 yen (approximately 3 dollars)?” Then he told me how much it is actually bought in the market – 80 yen. I was literally shocked and heart broken. I had never realized how much effort and care were put into a bag of green peas, or any vegetables before the experience of working at the farm. Moreover, by asking this question to participants, I was reassured again that the organic produce cost more. To conclude, the experience of growing your own food makes people aware of the gap between the value of farmers’ hard work and the market price of vegetables.

10. Concerns and Suggestions for Urban Vegetable Gardening in Halifax

This was the last question asked to participants in the interview. This question was designed to discover specifically what are currently preventing residents of Halifax from participating in vegetable gardening, and what needs to be improved as a city to provide citizens sufficient resources and opportunities to start urban vegetable gardening.

Concerns

● **Soil contamination**

This was undoubtedly the most significant concern for the participants (Table 2). Until recently, residents used coal to heat their residence, and also until early 1990s lead was a common component of house paint and gasoline (Ecology Action Centre, 2009). Also rocks in Halifax naturally contain arsenic, and it could leach into soil and potentially contaminate the ground water (Ecology Action Centre). These soil contaminations in the past still hinder the residents of Halifax from growing vegetables in their backyards or community gardens. Participant O mentioned that she becomes always concerned when she starts gardening in a new land:

When I am going to a new place, then I have a concern. Once I have worked with the soil for two or three years, and I’ve helped with that soil, then I know that we can make soil better. From what I understand, no matter what building compost helps all the problems that you can have. It will get better whether it has oil or lead or anything. Nature is amazing. (Participant O, personal

communication, March 2nd, 2010)

She indicated that, based on her experience, if you fertile the soil with compost, the land will eventually become suitable for vegetable gardening in a few years. However, soil contamination is still a large concern for a number of residents. Therefore soil testing is typically conducted prior to the vegetable gardening.

- **Disturbance of gardens by cats**

This concern may be unique to urban vegetable gardens in particular. It should be noted here that none of the participants were condemning their neighbors for the disturbance caused by their cats. Rather, they are looking for coexisting mitigation measures to prevent their vegetable gardens destroyed by the domesticated or stray cats. According to the participants, the main trouble caused by cats is the digging up of soil and therefore the planted seeds or transplants. The participants do not have fences surrounding their garden because of aesthetic and philosophical reasons. They want to see and others enjoy seeing their garden. Participant D told the researcher that she tried anything she could to avoid the disturbance in her garden:

I do have issues with the neighbors' cats. I don't know how to bring this up because the cats are constantly digging up my garden and pooping in my garden, like everyday. So I had to put up a huge fence around my garden. I tried everything. That was one thing where I got more annoyed with neighbors, because I didn't want to go over and say "keep your cat in side." Because then I thought they would be less... We are a little bit crazy in terms of environmentalism. We have a windmill on top of the house, and that required a lot of neighbor cooperation. So I didn't want to go ballistic about the cats where we needed their cooperation with the windmill and solar panels and all the construction we were doing, and we have a new shed that's going to have solar panels and...There's just been a lot of construction around the house and I was like, "okay I have to be careful about asking more". (Participant D, personal communication, February 12th, 2010)

As mentioned above, after all she had to build up a fence around her garden. Participant P decided to have

a container garden instead on her deck until the vegetables grow for certain size so that cats would not be able to dig them up (Participant P, personal communication, May 2nd, 2010). Further research may be necessary to provide peaceful mitigation measures between cats' temptation to enjoy the fertile soil in vegetable gardens and gardeners' concerns with the disturbance of their garden.

- **Shortage of vegetable gardening space in Halifax**

Currently, there are approximately 18 vegetable community gardens and farms in Halifax Regional Municipality (HRM) (Ecology Action Centre, 2009). Some participants in this study expressed their concern that Halifax does not currently have enough land space for people who would like to grow their own vegetables in the city. Participant M stated: "It is something I am concerned about that I wish more people would take a time, get outside and dig up the soil. However, there is not a lot of space for a lot of people to do, especially in the Halifax area" (Participant M, personal communication, February 25th, 2010).

This is particularly the case for elder residents, according to participant D:

My father-in-law had a big garden his backyard, but because of the health and age, he's moved to a condominium. So now he has no yard to grow vegetables in. He really enjoyed it, so is looking for a community garden where he might get a small plot. I'd like to see more of that sort of thing around here, especially in Halifax. You see a lot of apartments being built, but very few green spaces around where they could have a community garden locally. On the peninsula I am not personally aware of any community gardens. It would be nice to see more green spaces reserved. (Participant Q, personal communication, March 6th, 2010)

What local government could do to solve these concerns is introduced below.

Suggestions and requests to the local government

This was the last question in the interview, and therefore the last section of the Discussion chapter. Reflecting on the lived experience of urban vegetable gardening in HRM, gardeners have provided several suggestions and requests for the municipal government to make urban vegetable gardening more viable

options to residents who wish to start growing their own vegetables.

- **More accessibility to community gardens**

This was the most frequently mentioned request in the interviews. A few participants suggested that the local government should make temporal lease for community gardens to use currently unused vacant lots or green spaces for community gardens:

We need to let people have property that is not being used for community garden. Even if it's going to be used at some point, why not just say "okay, bring in some soil, grow some vegetables. I am going to put some building up here but in the mean time, use it." We should be looking for more opportunities to get people out doing these sorts of things. (Participant M, personal communication, February 25th, 2010)

Thinking from purely quantitative economic perspective, leasing lands to a community garden may not be rational. However, this research has, at least partly, shown the considerable amount of benefits that are not always counted in quantitative analysis, in other words, numerical values. Local population of Nova Scotia has one of the lowest vegetables or fruits intake in Canada, and this is causing a number of health problems to the citizens (McDonald, 2010). Some citizens are food insecure, hence they may not have an option to intake nutritionally recommended amount of vegetables or fruits. A current article of the Halifax local newspaper has reported that less than one third of provincial citizens, who are and over the age of 12, eat federally recommended five to ten servings of vegetables and fruit per day (McDonald). Hence, more implementation of community gardens in Halifax would not only help improve residents' healthy diet, but also could reduce the cost of healthcare or government spending by reducing the number of diet-caused disease patients, such as diabetes and hyper-tension.

- **Establish city-wide vegetable gardening supply Co-op**

3 participants suggested that they would like to see city-supported Co-op centre to supply tools and resources for urban vegetable gardeners who are in need. Participant J suggested the idea of centrally

distributed compost supplying and sharing facility:

If they had central distributed ways of adding fertility to soil. We kept so much compost that we produce and it just goes out of the city. If there was a way that city was encouraging people to compost in their own backyard. (Participant J, personal communication, February 18th, 2010)

Also a few participants requested for establishing publicly owned greenhouses for growing vegetable gardeners' transplants for the coming gardening season every year (Participant I, personal communication, February 18th, 2010; Participant K, personal communication, February 21st, 2010; Participant P, personal communication, March 2nd, 2010). In addition, high start-up cost is one of the major barriers for new gardeners, especially for younger population such as college students. Therefore some participants looked back on their early gardening experience in Halifax, and suggested that the city could found a Co-op where the members can get most of their gardening supply for relatively low price or in exchange with what they have in extra quantity (Participant A, personal communication, January 29th, 2010; Participant P).

- **Incorporate vegetable gardening into public schools' curriculum as part of environmental education**

2 participants indicated their suggestion for the government that public schools can incorporate vegetable gardening into their school program. In fact, participant G helped create a vegetable garden in her child's current school, Halifax Independent School:

One thought would be if they could do the program through schools where every single school had a gardening program, whether that is trained gardeners, volunteers or staff, that go and teach their children about planting... you know it could be even a smaller box of this size of the table. Every single school, so that children actually can get their hands on soil...and taking care of something. That's sort of sense of responsibility you can't just leave it in the burning sun, soaked with water or whatever. So if the city council could say, "we will actually either have people to volunteer to build these boxes or find the soil somehow or maybe we'll pay for it, every school has one of these boxes and if we could do something like..." (Participant G, personal communication, February 16th, 2010)

Participant Q is a high school teacher, and at the time of the interview he had been invited to attend training sessions for high school teachers to establish a gardening project in their school:

At my high school, we just got an E-mail about training sessions for teachers who want to start gardens at school. They would be given a certain amount of grant to start up a garden at school and they can get their students involved. Working together and seeing the environmental impacts and the science of the process of growing things, and physical activities of being outside, there are a lot of outcomes from high school that you could incorporate into gardening project. You could donate the produce to families who need it or you can use it in the school for healthy eating. We have a breakfast program for students with needs. We can use some of the vegetables for that. The concern is whether students would respect it. Whether they would vandalize it or not, or would they leave it alone?
(Participant Q, personal communication, March 6th, 2010)

Incorporating vegetable gardening into school curriculum would take a lot of time and debate among stakeholders. Results of this study show that the participants are continuously learning about not only how to grow vegetables well, but also about how everything is connected and the system is cyclical. Experiencing growing own vegetables during young age would make some impact on the students' attitude toward the natural environment.

- **Establish publicly funded accessible soil testing facilities**

It was introduced in the Concern section that the main concern of growing vegetables in Halifax among participants was contamination of the garden soil. To remediate or solve this concern, a few participants suggested that there should be more low cost soil testing service available locally. Participant P introduced the idea of implementing soil testing service at local universities (Participant P, personal communication, May 2nd, 2010). She also mentioned that the test result is currently difficult to interpret for people, especially for someone with no science educational background, hence the city should have information available on their official website.

- **Ban the sales of cosmetic herbicides or pesticides completely in HRM**

All the participants of this study were growing their vegetables organically. In other words, they do not use any synthetic herbicides or pesticides in their garden. Although HRM has enforced Pesticide By-Law P-800 in 2000, gardeners are concerned about the neighbors' illegal use of cosmetic herbicides or pesticides (Halifax Regional Municipality, 2010). They criticize that some retail stores still sell the synthetic herbicides and pesticides, and they request that the government should enact the complete ban of sales of those products in the city.

Chapter 6: Conclusion

This research explored the real experience of urban vegetable gardeners in Halifax to explore how gardening activity affects their perception of sense of community, using phenomenological study approach.

The three main research questions were:

1. How do urban vegetable gardeners perceive of sense of community, and how does vegetable gardening activity affect that perception?
2. What are their opinions about the social benefits and costs of participating in the vegetable gardens?
3. What are their concerns and suggestions for future improvements of urban vegetable gardening in Halifax?

The interview results (table 2) showed that the key elements of sense of community (trust, sharing and reciprocity), which were selected based on the literature review (Appendix A), were consistent with the participants' perception of the definition of sense of community. Moreover Table 2 and Chapter 5 indicated that all these three elements could be newly established or enhanced through the existence of vegetable garden in the urban neighborhood. Sense of trust in the neighborhood could be enhanced through the sharing of resources and helping each other out among neighbors. Act of sharing could be established or enhanced through the availability of extra harvest and by providing common experience or interests for the community members. Vegetable gardens could also act as an impetus to encourage reciprocal activities in the surrounding neighborhood by producing extra harvests for gardeners to give to others.

The interview results showed that urban vegetable gardening provides a variety of social benefits and only a few social costs to the gardeners and their community members. Gardeners appeared to get opportunities to interact with people who they otherwise would have never interacted. They have more common topics to talk with their neighbors. They can share resources and experiences that will enhance their quality of social interaction with others. Although a few negative social effects were introduced during the interview, which include the issue of cats and the loss of social interaction time for elderly citizens, they do not appear to be something that inhibit local government from implementing more community garden spaces and Co-op facilities that residents can start vegetable gardening at lower initial cost.

The main concerns and suggestions for future urban vegetable gardening in Halifax were the following:

Concerns

1. Soil contamination
2. Disturbance of gardens by cats
3. Shortage of community gardens

Suggestions

1. More availability of community gardens
2. Establish citywide vegetable gardening supply Co-op
3. Incorporate vegetable gardening into school curriculum as part of environmental education
4. Establish publicly funded accessible soil testing facilities
5. Ban the sales of cosmetic herbicides or pesticides completely in HRM

The researcher wishes that the readers of this thesis could broaden the understanding of urban vegetable gardening experience, and some may be interested in starting their own journey of vegetable gardening after discovering the potential effects that vegetable gardening could. Although this study was focused on the gardeners in Halifax, the results may be used for future city planning in other urban municipalities to make the lifestyle of their residents more environmentally and socially sustainable. For future researchers who would choose phenomenological approach, time framework of the research will be essential. Recruitment of researchers may be done by the additional use of posters so that the selection of participants is kept random. In addition, it may be worth undertaking to interview same participants twice, once during the gardening season and the other during the off-gardening season. There may be unique tendencies or differences in their response for each different season.

To conclude, this research made the researcher myself discover several unexpected effects that urban vegetable gardening could have on the gardeners' everyday lives. As the participants mentioned that they enjoy the whole process of growing vegetables, I certainly enjoyed, yet sometimes quite painfully, the whole process of phenomenological approach of this research. It is researcher's hope that urban vegetable

gardens become more common sight in Halifax, and growing food becomes everyone's joy once again.

Reference

- Baeyer, E. (1984). *Rhetoric and roses: A history of canadian gardening, 1900-1930*. Markham, Ontario: Fitzhenry & Whiteside.
- Bjørnskov, C. (2003). The happy few: cross-country evidence on social capital and life satisfaction. *Kyklos*, 56(1), 3.
- Brown, K. (2000). Public health implications of urban agriculture. *Journal of Public Health Policy*, 21(1), 20.
- Clayton, S. (2007). Domesticated nature: Motivations for gardening and perceptions of environmental impact. *Journal of Environmental Psychology*, 27(3), 215-224.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology*, 94(51), 95.
- Crotty, M. (1998). *The foundation of social research*. Thousand Oaks, CA: Sage Publications, Inc.
- Davidson, W. B. (1991). The relationship between sense of community and subjective well-being: A first look. *Journal of Community Psychology*, 19(3), 246.
- Denzin, N., & Lincoln, Y. (1998). *Collecting and interpreting qualitative materials*. Thousand Oaks, CA: Sage Publications, Inc.
- Department of Environment, Food and Rural Affairs. (2005). *Securing the future: UK government sustainable development strategy*. Retrieved 10/29, 2009, from <http://www.defra.gov.uk/sustainable/government/publications/uk-strategy/>
- Diener, E. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276.
- Diener, E., & Oishi, S. (2003). *Money and happiness: Income and subjective well-being across nations*. Cambridge, MA: MIT Press.
- Dolan, P., Peasgood, T. & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*. 29(94). 122.

- Domene, E., & Saurí, D. (2007). Urbanization and class-produced natures: Vegetable gardens in the Barcelona metropolitan region. *Geoforum*, 38(2), 287-298.
- Drescher, A. W., Holmer, R. J. & Iaquina, D. L. (2006). Urban Home gardens and Allotment Gardens for Sustainable Livelihoods: Management Strategies and Institutional Environments. *A Time-Tested Examples of Sustainable Agroforestry*. 317-318.
- Ecology Action Centre. (2009). *Putting food in our cities & community in our food*. Halifax, Nova Scotia: Ecology Action Centre.
- Heidegger, M. (1996). *Being and time* (J. Stambaugh, Trans.). Albany: State University of New York Press. (Original work published 1953)
- Hodge, H. N., Merrifield, T. & Gorelick, S. (2002). *Bringing the Food Economy Home: Local Alternatives to Global Agribusiness*. London, UK: Zen Books.
- Easterlin, R. (1996) *Growth triumphant: the twenty-first century in historical Perspective*. Ann Arbor, US: University of Michigan Press.
- Grimm, N. B. (2008). Global change and the ecology of cities. *Science*, 319(5864), 756.
- Halifax Regional Council. (2009). *Community gardening council report*. Retrieved 11/20, 2009, from <http://www.halifax.ca/council/agendasc/documents/091027ca1151.pdf>
- Heller, K. (1989). The return to community. *American Journal of Community Psychology*, 17(1), 1.
- Helliwell, J. F. (2004). The social context of well-being. *Philosophical Transactions - Royal Society. Biological Sciences*, 359(1449), 1435.
- Kaplan, R. (2001). The nature of the view from home: Psychological benefits. *Environment and Behavior*, 33(4), 507.
- Kawachi, I. (2004). Commentary: Reconciling the three accounts of social capital. *International Journal of Epidemiology*, 33(4), 682.
- Kearney, A. R. (2006). Residential development patterns and neighborhood satisfaction: Impacts of density and nearby nature. *Environment and Behavior*, 38(1), 112.

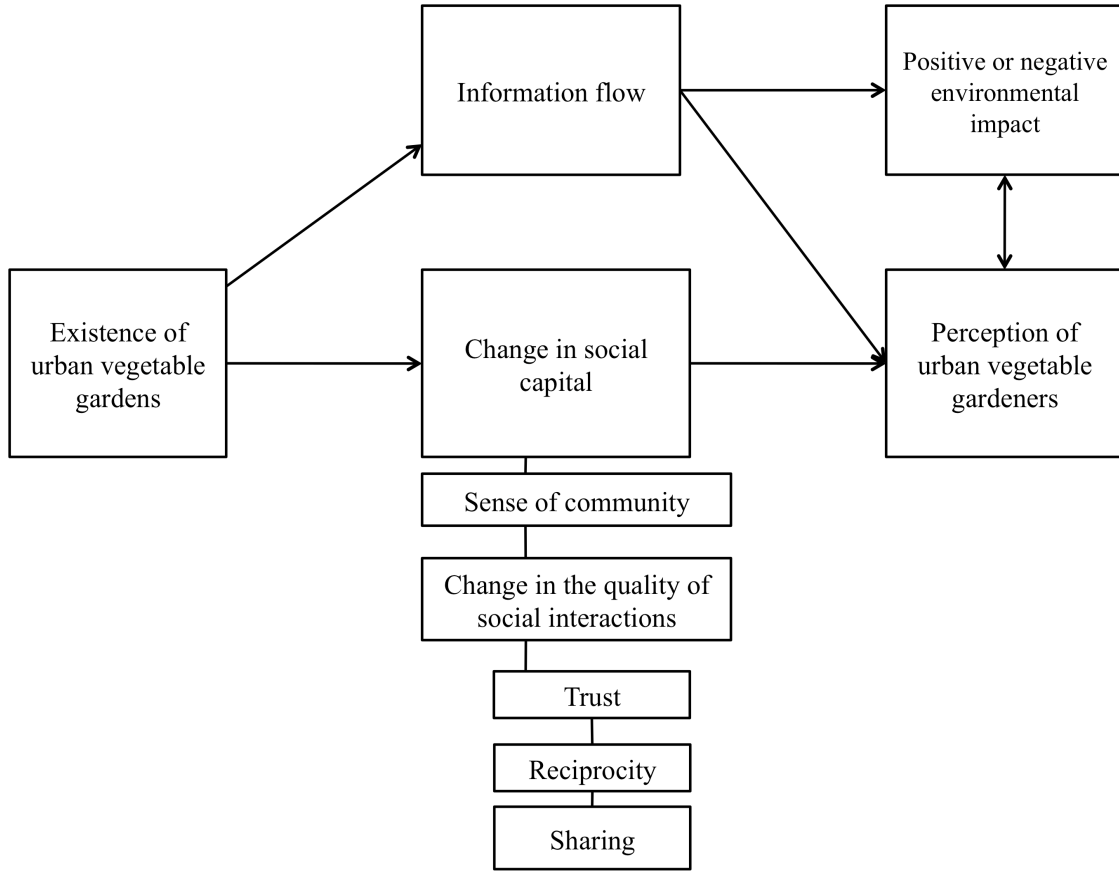
- Kellert, S. R. (1997). *Kinship to mastery: Biophilia in human evolution and development*. Connecticut Avenue, NW: Island Press.
- Kraut, R., Patterson, M., Lundmark, V, Kiesler, S., Mukopadhyay, T. & Scherlis, W. (1998). Internet Paradox: A Social Technology that Reduces Social Involvement and Psychological Wellbeing?. *American Psychologist*. 53(9). 1057.
- Lewis, C. A. (1990). Gardening as healing process. *The meaning of gardens* (pp. 244-251). Korea: Dai Nippon.
- Levkoe, C. Z. (2006). Learning democracy through food justice movements. *Agriculture and Human Values*, 23(1), 89.
- Lin, N. (2001). *Social capital: A theory of structure and action*. Cambridge, MA: Cambridge University Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications, Inc.
- Lyon, L. (1999). *The Community in Urban Society*. Long Grove, Illinois: Waveland Press.
- Martin, C. (1998). *Cultivating canadian gardens: The history of gardening in canada*. Ottawa: National Library of Canada
- Mcdonald, S. (2010, May 5th). Eat your greens, provincial campaign urges. *Metro Halifax*. Retrieved from <http://www.metronews.ca/halifax/local/article/486849>
- McMillan, D. W. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6.
- Melinda, A. M. (2007). *A Sense of Community through an Urban Greenspace: Perspectives on People and Place*. Retrieved from ProQuest Digital Dessertations & Theses. (AAT 3255561)
- Mendes, W. (2008). Using land inventories to plan for urban agriculture: Experiences from Portland and Vancouver. *American Planning Association. Journal of the American Planning Association*, 74(4), 435.
- Michelson, W. (1970). *Man and his urban environment: A sociological approach*. Canada: Addison-Wesley Pub. Co.

- Miller, J. R. (2005). Biodiversity conservation and the extinction of experience. *Trends in Ecology Evolution*, 20(8), 430.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, 55(1), 56.
- Nasar, J. L. (1995). The psychological sense of community in the neighborhood. *American Planning Association. Journal of the American Planning Association*, 61(2), 178.
- Pretty, G. M. H. (1996). Sense of community and its relevance to adolescents of all ages. *Journal of Community Psychology*, 24(4), 365.
- Pretty, J. (2001). Social capital and the environment. *World Development*, 29(2), 209.
- Pretty, J. (2005). The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research*, 15(5), 319.
- Putnam, R. D. (2000). Bowling alone: America's declining social capital. *Journal of Democracy*, 6, 65.
- Quayle, M. (1989). Canadian community gardens: A sustainable landscape legacy. *Landscape Architectural Review*,
- Ross, C. E., & Hayes, D. (1988). Exercise and psychological well-being in the community. *127(4)*, 762-771
- Rudestam, K., & Newton, R. (2007). *Surviving your dissertation: A comprehensive guide to content and process* (3rd ed.). Thousand Oaks, California: Sage Publications, Inc.
- Scully, D., Kremer, J., Meade, M., Graham, R., & Dudgeon, K. (1998). Physical exercise and psychological well-being: A critical review. *32(2)*, 111-120.
- Semenza, J. (2008). An urban community-based intervention to advance social interactions. *Environment and Behavior*, 41(1), 22.
- Simson, M. & Martha, C. S. (1997). *Horticulture as Therapy: Principles and Practice*. New York: The Food Products Press.
- Steinberg, T. (2006). *American green: The obsessive quest for the perfect Lawn*. New York, NY: W. W. Norton.
- Taylor, J. (1998). *Tools of the earth: The practice and pleasure of gardening*.

- Teig, E., Amulya, J., Bardwell, L., Buchenau, M., Marshall, J. A., & Litt, J. S. (2009). Collective efficacy in Denver, Colorado: Strengthening neighborhoods and health through community gardens. *Health & Place, 15*(4), 1115-1122.
- The Halifax Garden Network. (2008). *Map of gardens, garden projects and garden resources in the HRM*. Retrieved 10/25, 2009, from <http://maps.google.ca/maps/ms?hl=en&ie=UTF8&msa=0&msid=115767655023931137784.000455682e8d184d30f80&ll=44.648994,-63.592129&spn=0.04885,0.102997&z=13&source=embed>
- United Nations Population Fund. (2007). *State of world population 2007: Unleashing the potential of urban growth*. Retrieved 10/30, 2009, from <http://www.unfpa.org/swp/2007/english/introduction.html>
- Vogl, C. R. (2004). Urban organic farming in Austria with the concept of Selbsternte ('self-harvest'): An agronomic and socio-economic analysis. *Renewable Agriculture and Food Systems, 19*(2), 67.
- Wilson, E. O. (1984). *Biophilia*. Boston, MA: the President and Fellow of Harvard College.
- Wirth, L. (1938). Urbanism as a way of life. *The American Journal of Sociology, 44*(1), 1.
- Yamaoka, K. (2008). Social capital and health and well-being in east asia: A population-based study. *Social Science Medicine, 66*(4), 885

Appendix

Appendix A: Theoretical Framework Of the Study



Appendix B: Questionnaire

Questionnaire

This short questionnaire will be used for future data analysis, combined with your interview result. Please encircle the question no. 1, 2, 4 and 5. For question no. 3 and 6, please fill in your own answer. If you do not feel comfortable to answer any of the following questions, please feel free to leave them blank.

(2) Age

0~9 10~19 20~29 30~39 40~49 50~59 60~

(3) Do you currently live with your children?

Yes No

(4) Occupation (please describe in your own words)

4. Highest Level of Education

Less than High School High School College Degree (Associate, BA, BS)
Master's Degree Doctoral Degree Professional Degree (MD, JD)

5. Years of vegetable gardening experience in the current location

Less than a month 1~3 months 4 months~1 year 1~3 year More than 3 years

6. What type of vegetables do you grow in your garden (please describe in your own words)?

Appendix C: Interview Consent Form



Department of Environmental Science
1355 Oxford St.
Faculty of Science, LSC 827
Halifax, NS B3H 4J1

Interview Consent Form

Project Title:

Phenomenological Study of Urban Vegetable Gardening in Halifax: How Does Urban Vegetable Gardening Activity Affects the Daily Lives of the Gardeners and Their Sense of Community?

Principal Investigator:

Takuya Ozawa, Department of Environmental Science

Supervisor:

Dr. Ruth Forsdyke, Asst. Prof., Department of Economics,

Introduction

We invite you to take part in a research study being conducted by Takuya Ozawa, who is an undergraduate student at Dalhousie University, as part of his Bachelor of Science program. Your participation in this study is voluntary and you may withdraw from the study at any time. Your academic (or employment) performance evaluation will not be affected by whether or not you participate. Objective of the study is described below.

This description tells you about the risks, inconvenience, or discomfort which you might experience. Participating in the study may not benefit you directly, but we will learn things that will benefit others. You should discuss any questions you have about this study with Takuya Ozawa.

Purpose of the Study

This study will investigate the currently existing three different types of urban vegetable gardens – allotment gardens, community gardens, household gardens – and explore how the participants of those gardens perceive the effects of growing vegetables on their sense of community and their flow of knowledge. The purpose of this study is to explore the effects on sense of community due to participating in urban vegetable gardens. The three main objectives are:

1. To investigate how the participants in the vegetable gardens perceive of sense of community, and

whether and how vegetable gardens change that perception

2. To explore the participants' opinions about the social benefits and costs of participating in the vegetable gardens to themselves, neighbourhood, and the natural environment
3. To provide local government with recommendations for future city planning in Halifax

In modern urban areas, particularly in industrialized countries, the importance of "sense of community" at the local level has been forgotten or lost in several ways. By focusing on urban vegetable gardens in Halifax, this research will explore the social aspects of the existence of vegetable gardens and the possibility of the conservation of currently existing gardens and further implementation of gardening opportunities for not only environmental and economic, but also for social reasons. Individual face-to-face interviews will be conducted with participants from each of three types of urban vegetable gardens.

Study Design

During this study, participants will be asked to answer several questions as to changes in their perceptions of sense of community by participating in vegetable gardens. This interview is designed to be approximately half hour in length. However, please feel free to expand on the topic or talk about related ideas. Also, if there are any questions you would rather not answer or that you do not feel comfortable answering, please say so and we will stop the interview or move on to the next question, whichever you prefer. The interview will be recorded using digital audio recording device. The collected data will be analyzed and compiled into the final report. This study is designed to be a descriptive study, which means that the data analysis will be done by using written languages and describing the findings, rather than conducting sophisticated statistical analysis, although simple statistical analysis may be conducted given sufficient amount of data.

Who can Participate in the Study

You may participate in this study if you are currently engaging in any outside vegetable gardening activities.

You may be of any age, except that if you are under 18 years old, your guardian needs to sign the consent form.

Who will be Conducting the Research

Only the researcher Takuya Ozawa and the faculty supervisor Dr. Ruth Forsdyke mentioned above will primarily have access to the obtained information. Upon completion of this project, all the collected data will be destroyed.

What you will be asked to do

If you generously agree to participate in this study, the researcher Takuya Ozawa will directly interview you individually. The interview location and time will be determined by your choice from the following: your garden, your residence, or a room on campus at Dalhousie University. First, the researcher will explain to you briefly about the project, and any potential circumstances that could result when you participate in this research. Second, you will be asked to fill in a short basic questionnaire, which should take a few minutes at most. Third, a face-to-face interview will be conducted, which will take approximately half an hour to complete. At the end of the study, you are welcome to ask any questions regarding the project.

Possible Risks and Discomforts

There will be minimal risk in participating in this study. However, potential risks are the following:

1. Since this study will use face-to-face interviews as a primary data collection tool, the complete anonymity of participant cannot be guaranteed. To minimize the any risks for participant, three measures will be taken. First, participants are given rights to reject answering any questions about which they do not feel comfortable. Second, the interviewer will be only the researcher Takuya Ozawa, and the data recording will be only done using audio-recording device, not any kinds of visual recording devices such as video camera. Third, participant's name will not be disclosed.
2. There is a low risk that the community where participants belong to will incur negative consequences by answering interview questions for the following reasons. First, the interview will include certain questions that will ask about the relationship between participant and his/her neighbours. These questions are necessary to investigate whether the participants' quality or quantity of social interaction have changed in any way since started participating in gardening activity. During the data analysis, no specific name of the individual or the community will be disclosed, so that the risk of involved communities will be mitigated.

Participant may feel uncomfortable when asked certain questions. In that case, he/she is given the right to refuse answering those questions. The researcher will make his best effort to make the interview process least stressful and rather beneficial to participants.

Potential Benefits

As potential direct benefit, participant will be able to share the experience of vegetable gardening with other vegetable gardeners in Halifax through receiving the access to the final report of this study. Moreover, the researcher is tentatively planning to send the final report to the local government, and therefore the

participants' requests for the future city planning will be heard. As a potential indirect benefit, participant may be able to learn more about the social effects of participating in urban vegetable gardens by recalling gardening experience in the past and by interacting with the researcher. Participant may not have thought in the past about how his/her gardening activity will affect the sense of community around his/her garden.

Compensation/Reimbursement

There will be no monetary compensation due to the researcher's financial constraints. Participants' generous offering of their time will be sincerely appreciated with gratitude, and the final work of the thesis will be available to them. They will also be invited to the Honours Thesis Project Fair where the researcher will give the final presentation for the study, of which date is April 9th, 2010.

Anonymity and Confidentiality

Anonymity:

As mentioned the above, since this study will use face-to-face interviews as a primary data collection tool, the complete anonymity of participant cannot be guaranteed. To minimize any risks for participant, three measures will be taken. First, participant is given rights to reject answering any questions if he/she do not feel comfortable disclosing. Second, the interviewer will be only the researcher Takuya Ozawa, and the data recording will be only done using audio-recording device, not any kinds of visual recording devices such as video camera. Third, participant's name will not be disclosed.

Confidentiality:

All the collected data will be kept confidential by following the procedure stated below:

1. The collected information will be analyzed and compiled using the descriptive method, which means that some information you will provide may be directly or indirectly quoted. To prevent any risks for participants, you have the right to refuse answering any questions. In addition, during the interview period, if you do not want some already expressed information to be used for data analysis, the researcher will immediately erase the part of the audio data in front of the participant.
2. Collected audio data will be securely stored in the external media (memory disk). There is a limitation for full confidentiality since the external media needs to be carried by the researcher in some occasion, and this may cause some risk of getting the collected information disclosed. To minimize this risk, the password to access the data will be applied and it will be only known to the researcher Takuya Ozawa. During the data analysis, supervisor Dr. Ruth Forsdyke may be a data analysis advisor given her technical knowledge. Upon completion of this project, all the collected data will be completely destroyed/erased.

The limitation for the protection of confidentiality is that the external media needs to be carried with the

researcher in some occasion, and this will cause some risk of getting the information disclosed.

Questions

If you have any comments, questions, suggestions or concerns, please do not hesitate to contact the researcher Takuya Ozawa by email or telephone (contacts information is provided above).

Problems or Concerns

If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact Patricia Lindley, Director of Dalhousie University's Office of Human Research Ethics

Administration, for assistance at (902) 494-1462, patricia.lindley@dal.ca

Appendix D: Participant's Agreement Form



Participant's Agreement

Project Title:

Phenomenological Study of Urban Vegetable Gardening in Halifax: How Does Urban Vegetable Gardening Activity Affects the Daily Lives of the Gardeners and Their Sense of Community?

I am aware that my participation in this interview is voluntary. I understand the intent and purpose of this research. If, for any reason, at any time, I wish to stop the interview, I may do so without having to give an explanation.

The researcher has reviewed the individual and benefits and risks of this project with me. I am aware the data will be publicly available on the Dalhousie University website. I have the right to review, comment on, and/or withdraw information prior to the project submission. The data gathered in this study are confidential with respect to my personal identity unless I specify otherwise. I understand if I say anything that I believe may incriminate myself, the interviewer will immediately record over the potentially incriminating information. The interviewer will then ask me if I would like to continue the interview.

If I have any questions about this study, I am free to contact the student researcher or the faculty adviser.

I am aware of the fact that my answer will be recorded by audio digital recording device, and quotation of my answer will be permitted. I have a right to review the transcript of the interview.

I have been offered a copy of this consent form that I may keep for my own reference. I have read the above form and, with the understanding that I can withdraw at any time and for whatever reason, I consent to participate in today's interview.

Participant's signature

Date

Interviewer's signature

Guardian's signature (if required)

Appendix E: Interview Questions

1. Why did you start growing vegetables?
2. How, if at all, participating in vegetable gardening affected your daily life? (Socially, psychologically, physically, etc.)
3. What do you think are the social benefits and costs of vegetable gardening activity?
4. What other words will come up in your mind when you think about community?
5. What does the phrase sense of community mean to you?
6. Have you gotten to know more neighbours and knowing them better since you started gardening?
7. Do you think having vegetable gardens has changed your and your neighbours' feeling of trust?
8. Do you think having vegetable gardens has changed your and your neighbours' feeling of safety?
9. Do you think that vegetable gardening has changed your frequency of social interactions with particular groups of people?
10. Have you made garden-related information or goods exchanges with others?
11. Have you been more involved in local politics as a result of vegetable gardening?
12. Do you think that vegetable gardening activity has changed your view of agriculture, farmers or/and nature?
13. Over all, how do you think vegetable gardening activity affected your well-being?
14. What concerns, if any, do you have about urban vegetable gardening in Halifax?
15. What suggestions or requests, if any, do you have for improving urban vegetable gardening in Halifax?

Appendix F: Map of Interviewed Allotment and Community Gardens in HRM

