Commercial Urban Farm Models for Guelph, Ontario

by

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The current food system relies on global industrial agriculture and undermines food security partly by destroying the economic underpinnings of a localised food system. The potential efficiency of ecologically-integrated local agriculture addresses the economic and environmental implications of climate change associated with the food chain. The purpose of this study was to examine and compare existing North American models of commercially successful UA from northern climates and to create sample designs of an urban agricultural (UA) enterprise for sites in Guelph, Ontario. A case study approach and literature review was used to elicit key components of successful UA. Results indicate that profitable small scale, ecologically integrated agri-enterprises require a high degree of technical and business skills. Two site-specific designs provide examples of how a commercial urban farm can be incorporated into the city matrix of Guelph, Ontario.

**Keywords:** Entrepreneurial UA, food security; bio-regional food systems; sustainable urban design; food culture; urban resilience; municipal economics
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1.0 INTRODUCTION

1.1 BACKGROUND

Urban centres have lost most of their food production capacity. As a city poised for major expansion and intensification, Guelph stands at a crossroads, to develop and preserve arable land for food production, or not. The lack of a developed urban food sector has important social, environmental and economic repercussions. City children rarely have the opportunity to directly, and on an ongoing basis, connect with their food and the environment and observe and engage with the food cycle, from seed to table, in a way that is meaningful and relevant to their lives and landscape. The outsourcing of food production beyond a region makes food production invisible and affects the transmission of food literacy and agricultural knowledge capital to current and future generations. The loss of regional food capacity compromises food security and sovereignty, leaving cities more vulnerable to disruptions to the global food supply. The consolidation of power in the conventional food system gives consumers and producers little direct control over food production. A compromised local food system is a detriment to community health and economic development.

There is, however, a growing awareness of these issues beyond grassroots. Organizations such as the Ontario Centre of Excellence and the Metcalfe Foundation are recognizing the value of city food capacity and funding UA (UA) initiatives. As part of this thesis, the Ontario Centre of Excellence jointly funded a research collaboration project that viewed entrepreneurial Urban Agriculture (UA) as a valuable skill and knowledge intensive solution for advancing issues of sustainability and competitiveness of the Ontario economy.

The urban growing environment has several advantages for the farmer. The extended microclimate allows an additional 2 to 4 weeks of frost-free growing conditions. There is
reduced pest and wind pressure and year-round access to municipal water for irrigation. The proximity to the customer base allows and access to non-conventional labour gives the urban farmer a competitive edge.

1.2 GOALS AND OBJECTIVES

Goals:

1) To aid prospective farmers to start an urban farm enterprise by proposing strategies that address some major barriers to UA in Guelph, Ontario.

2) To provide a model urban farm design for Guelph, Ontario.

Objectives:

1) To perform a literature review of the benefits and barriers to UA, with a focus on commercial applications to Southwestern Ontario.

2) To identify model farm enterprises for study by conducting a literature and internet search and interviewing key informants.

3) To explore challenges to UA in Southwestern Ontario and find potential solutions and model farm enterprises by interviewing key informants.

4) To investigate examples of agriculture enterprises with application to the Guelph context and UA scale.

5) To conduct a limited land survey of potential UA sites in Guelph.

6) To explore potential lease arrangements for UA on institutional and industrial greenfields in Guelph.

7) To propose an urban farm design concept for an institutional and an industrial site in Guelph.

This thesis is divided into six chapters. Chapter Two provides a literature review on the major benefits and barriers for entrepreneurial UA. Chapter Three describes the multi-method
approach used to gather data for this study, including interviews with key informants, a land
survey and case studies. Chapter Four presents the results of the study, including two
demonstration farm designs and critique by a design key informant. The results of the case
studies are analysed with respect to the key themes such as land base, soil fertility,
microclimate, product quality, distribution and marketing and enterprise profitability. Chapter
Five discusses the research findings and their significance with respect to the study goals and
objectives. Finally, Chapter Six concludes the thesis with comment on the limitations of this
study, advice for landscape architects and suggested future exploration.
2.0 LITERATURE REVIEW

This literature review will examine the current and past role of UA, specifically in the developed world. The major potential social, economic and environmental benefits of UA will be presented with relevance to the Guelph, Ontario context. The literature review will conclude by summarising some of the biggest challenges to the development of UA, with a focus on entrepreneurial UA. Specifically, the issues of profitability, land base acquisition, zoning and development policy, and UA-scaled regulation will be examined.

2.1 WHAT IS URBAN AGRICULTURE

UA has been practised as long as cities have existed. The following commonly used definition of UA is provided by Mougeout (2006, p.82):

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

This definition includes the peri-urban area as well as cultivation practised within the city limits, considering the urban sphere of influence (Smit et al., 1996). The United Nations Development Advisory Programme further characterizes UA as having a product that is harvested and reaches the consumer or market on the same day (Smit et al., 1996). This understanding may need refining to perhaps mean having a reasonable capacity to reach the market on the day of harvest. Intensive cultivation practices are also commonly a distinguishing feature of UA that distinguishes it from rural systems (Veenhuizen, 2007). The restricted farming area as well as the special relationship to the immediate urban market are commonly associated with UA (Veenhuizen, 2007). UA is often geared towards local, rather than countrywide or global markets (Smit et al., 1996).
UA is broad in scope and diverse in the type of products generated (Smit et al., 1996). The products and services can include the fields of horticulture, aquaculture, apiculture, vermiculture and other livestock, arboriculture, ecological restoration, as well as tourism and education (Smit et al., 1996). The understanding of food production is also not limited to primary creation, but comprises the whole cycle of food consumption, including pre and post production methods, waste cycling, as well as distribution systems (Smit et al., 1996).

Recent trends in UA have framed it as mostly a food security issue for the urban poor of the world, or as a response to concerns about food quality and safety for practitioners in the wealthy countries of the world (Smit et al., 1996). UA is not limited to being a means of survival for those in economic turmoil, although this is important. All over the world, UA has also been practised because it can be a profitable business.

The nineteenth century market gardens of Paris are an example of one of the most successful cultivation systems in history (Stanhill, 1976). It was more profitable and productive than fully industrialized modern agriculture in 1976, when Stanhill (1976) published his analysis. This was achieved partly through the use of season extension as well as inter and successional cropping that allowed multiple harvests within one year (typically 3-6) (Stanhill, 1976). The majority of these urban farmers operated on rented land averaging 1.3 acres (Stanhill, 1976). The production yields exceeded the per capita fresh fruit and vegetable consumption of the average Parisian and provided a surplus that was exported to London (Stanhill, 1976). The decline of this system in the early 1900s was partly due to the drastic decline and rise in cost of an essential input, horse-manure, that resulted from the rise of the motorcar (Stanhill, 1976). Motorized transport also brought competition, especially from more temperate growing regions. These factors as well as increased land competition led to the decrease in profitability and subsequently the industry as a whole (Stanhill, 1976).
There are many examples of highly profitable pre-industrial UA enterprises, going back to the pastio villaticas of ancient Rome or the market gardens of London, both of which made a handsome profit specializing in luxury goods, such as the perishable and labor intensive fresh fruits and vegetables, for the lucrative urban market (Steele, 2009). A modern example of profitable UA is the Ranstad, or green core, of the Netherlands. This highly developed agricultural system, in one of the world’s most urban and densely populated areas, was necessitated by the lack of arable land for expansion (Smit et al., 2001). Intensive farming in Holland resulted from the realization that the only way to increase productivity was through intensification of production value per unit of space (Smit et al., 2001). The Dutch system realizes the common UA success strategies of increased production for a defined market (Smit et al., 2001). Today the Ranstad is a world leader in agricultural production and also features season extension, high-value crops, extension and credit services, research and training, marketing cooperatives and environmental protection (Smit et al., 2001).

City and country have always been joined in a sometimes uneasy mutual dependence (Steele, 2009). The existence of a grain surplus made civilization possible by allowing a sufficient food surplus to build up population densities needed for states to develop (Diamond, 2013). Without farming, cities could not exist (Steele, 2009). It is likely that the two evolved together (Steele, 2009). Agriculture is a form of city building, that is as key a component of a metropolis as its streets and buildings. Most agriculture is a ‘built’ landscape, in that it is an artificially maintained human creation. The role of farming for cities was something that was historically well understood (Steele, 2009). A city’s ability to feed itself was top priority. The first commonly recognized city, Uruk of ancient Sumer, distinguished by the hallmark of civilisation, the division of labor, had a civic service largely devoted to the administration of the municipal agricultural lands (Steele, 2009). The sophisticated crop irrigation systems of Uruk eventually led to the destruction of the food supply through
salinization of the soil and the abandonment of the great city (Steele, 2009). The feeding of cities has always been serious business, and is one of the most dominant formative influences on culture and human settlement (Steele, 2009). The development of suburbia is intimately linked with the supermarket. The ancient Greeks and Romans, for example, attached as much importance to farming as the cities they fed (Steele, 2009). The Romans considered the productive area around Rome as an extension of the city and had a distinct name for it, the ager, in contrast to the saltus, the wild unkempt land beyond (Steele, 2009). The agriculturally-engaged citizens of the ancient polis (city-state) of Athens had the same rights as their urban dwelling neighbours (Steele, 2009). In pre-industrial cities, before supermarkets and refrigeration, one could not ignore where one’s food came from, as it was a constant presence in the urban streetscape (Steele, 2009). Although we are no longer witness to the processes of our food supply chain, our existence is still as dependent on farming today as it was thousands of years ago. We are still animals that are dependent on the land, even if that land is on the other side of the globe (Steele, 2009). With the urbanisation of most of the population, we have developed a distorted view of the city to farm relationship, with a disproportionate focus on the built environment (Steele, 2009). This city-centric view is evident in our cultural representations of cities, which exclude the foodbelt or portray it as a non-descript green void (Steele, 2009). The importing of food from far-flung places is not a new phenomena; what is different today is that as a society we have, for the most part, come to take food for granted (Steele, 2009), despite the fact that most North American cities have about a 3 day food supply at any one time. The ancient food miles in the diets of citizens of port cities such as ancient Rome could rival those of their modern counterparts (Steele, 2009). Rome had to wage war on other countries to secure their grain supply and feed the capital’s voracious appetite (Steele, 2009). The view of agriculture as being a critical part of a city is something that was understood by all cities everywhere until relatively recently (Steele, 2009)
Despite the political and cultural barriers, approximately fifteen percent of the world’s food is produced in urban areas (Smit et al., 1996). Worldwide, UA is a significant economic activity for over 800 million people, including 200 million commercial producers and providing full time employment to 150 million people (Mougeot, 2006). Most of this activity is focused in the poorer countries of the world, where UA is, for many, a vital food security strategy. However, a disruption to the regular food supply often reveals the latent food production capacity of cities, even ones without an active metro-intensive agriculture industry (Smit et al., 1996). This ability has been demonstrated by cities as diverse as World War II London, post USSR Havana and Soviet era St. Petersburg. Britain’s ‘Dig for Victory’ campaign during World War II succeeded in supplying England with half of its fruit and vegetables and a tenth of the population’s entire food requirements (Steele, 2009). The inadvertent Cuban UA experiment in the last two decades was a response to the collapse of the Soviet aid and trade that Cuba had come to rely upon to feed its overwhelmingly urban (80 percent) population (Mougeot, 2006). The resulting acute food shortage led to a transformation of Cuban cities by a government sponsored but entrepreneurially-driven UA laboratories that in just over a decade had Cuba producing more fresh vegetables than had been previously available and providing employment for more than 200,000 Cubans (Mougeot, 2006). The development of UA in St. Petersburg in Russia was originally mobilised by the frequent inadequacy of the Soviet government food supply and distribution system, and grew further following the disintegration of the Soviet regime (Sharashkin, 2008). Today, over two and a half million urbanites are involved in urban agriculture whose combined yield exceeds that of the industrial farms of the 83908 sq km Leningrad region (Moldakov, 2001). The vast majority of St. Petersburg citizens engaged in UA live in relatively-dense highrise apartment complexes and travel to a peri-urban agricultural landbase (Moldakov, 2001).
These examples are instructive because they show that even cities that were designed to rely on an external food supply have substantial food production capacity. (Steele, 2009). Globally, UA is an underdeveloped potential industry with important potential economic and environmental benefits (Mougeot, 2006).

The expression of agriculture has historically varied according to market proximity; what we might classify as UA would have likely been more intensive and focused on highly perishable and consequently valuable crops. UA was not seen as a separate, marginal activity, but as a legitimate form of agriculture and contributor to the food supply. In contrast to today, in the West, UA is not considered a significant industry (Smit et al., 1996). The term is more commonly associated with recreation, such as home kitchens or community gardens (Smit et al., 1996). When UA is discussed in terms of making a significant dietary contribution it is usually as a response to poverty or as an antiquated agrarian habits of immigration (Smit et al., 1996). The idea of commercial farming and cities is commonly seen as an incompatible combination of activities and is often viewed as an oxymoron. There are underlying cultural misconceptions about UA that have limited its development (Smit et al., 1996). The city is seen as the centre for industry and commerce, whereas agriculture belongs in the rural hinterland (Smit et al., 1996). Most cities are built on fertile land, a limited resource, it makes sense to grow food on productive land; it seems almost perverse to prefer commercial businesses such as Wal-mart on quality soil over a commercial urban farm (Smit et al., 1996). The idea of agriculture as an inappropriate urban activity partly stems from the misconception that UA is polluting, a threat to human health and a symptom of poor urban and rural development (Smit et al., 1996).

The beginning of the geographic separation of agriculture from cities accompanied mass industrialisation and urbanisation in the nineteenth century (Steele, 2009). At this time, Western cities, for the most part, were overcrowded with inadequate waste and sewage
infrastructure and were struggling with the concomitant stench and constant risk of disease (Steele, 2009). Historically, UA, such as market gardens, provided a city with a valuable service by cycling its organic waste (Smit et al., 1996). The presence of food in pre-industrialized cities has also at times been cruel and unsanitary (Steele, 2009). In London, for example, up until 1848, unregulated slaughterhouses meant that animals were often kept and slaughtered in filthy and cramped basements of houses and butcher shops (Steele, 2009). Western cultural attitudes towards dirt are full of fear, influenced by our understanding of microbiology (Steele, 2009). This new cultural anxiety, combined with a dose of human hubris and the urgency of the waste problem in pre-industrial cities led to a solution that effectively exported the problem out of sight and smell, often into the nearest body of water (Steele, 2009). The appreciation of the regenerative capacities of a city’s nutrient resources faded and its multi-dimensional qualities, along with that of soil, were reduced to simply dirt (Steele, 2009). Modernity came to be synonymous with purity, and agriculture, with its necessary cycles of decay and creation, suddenly did not belong in the progressive city and became an old-fashioned vestige of an unclean and poor city without modern infrastructure (Smit et al., 1996).

There are exceptions to this pattern, notably in some parts of Asia, including China, Japan and Singapore, where, likely as a result of resource pressure such as the lack of arable land in Japan, UA remains to this day as a recognized and respected urban land use and has historically been included in urban planning and design. As a result these countries have some of the most diverse and productive urban farms in the world (Smit et al., 1996). The otherwise widespread idea, that UA is not a productive industry accorded the same status as other industries, partly stems from the assumption that it is inefficient in comparison to rural agriculture (Smit et al., 1996). There is a further misunderstanding of the productive potential of small scale ecologically-integrated farming in comparison to large scale industrial agriculture. Large scale industrial farming is highly mechanized in comparison to intensive urban farming which tends
to rely less on machines and more on physical labor. The promise of the industrial revolution was to free, at least some of us, from physical toil. Not to say that industrial farming is easy work, but when one contrasts some of the “drive and spray” cultivation methods commonly associated with growing corn, with that of the hand weeding practices of some intensive urban market gardens, one can see how one can view this as an archaic, almost ungrateful, response to the promise of emancipation offered by ‘modern’ agriculture. Culturally, we find beauty in a large monoculture planting of, say, wheat or corn, but fail to appreciate the aesthetic quality of an orderly and productive market garden (Smit et al., 1996). If one needs proof that a productive urban landscape can also be beautiful one need look no further than nineteenth century Gennevilliers, a municipal sewage treatment field transformed by intensive horticulture into a ‘veritable garden of Eden’ and a popular daytrip destination for Parisians (Reid, 1991).

Despite the obvious dependence of cities on farmers to feed them, the last 50 years or so have been characterised by a distorted view of this relationship (Steele, 2009). Although, over the last century, North American governments have provided significant financial support to the rural agricultural sector, UA has, for the most part, been off the agenda (Smit et al., 1996).

For most of human ancestry, the sourcing, preparing and sharing of food has been a central activity of daily life (Pollan, 2008). The industrialization of food has led to the displacement of an established dietary pattern with the fast food culture of the Western diet (Pollan, 2008). This shift has radically altered what we eat, how we eat it, and the way we think about food and transmit these ideas and habits to children (Pollan, 2008). Today, most of us are eating food that is less diverse and nutritious than prior to the industrialization of food (Pollan, 2008). The range and variety of foods that we consume has been drastically reduced (Pollan, 2008). Historically, humans have consumed over 80,000 different species of plants and
animals, of these some 3,000 of these species were widely used (Pollan, 2008). Today, the majority of us get two thirds of our calories from just four crops: corn, wheat, rice and soybeans (Pollan, 2008). The apparent bounty and choice of a supermarket belies the reduction in the variety of commercially grown species (Steele, 2009). What drives mainstream food selection and processing is not taste or nutrition, but how well that food fits into the economies of scale of the global food distribution system (Steele, 2009). The crops that allow the maximization of profit within this system are the ones that are easy to store, can withstand mechanized handling, and long distance travel, can be picked before they are ripe, provide a consistent high crop yield and can be produced all through the year by being able to be grown in the northern and southern hemispheres (Steele, 2009). That is why more than 99 percent of turkeys raised in the United States and Canada are Broad-Breasted Whites, or that half of the broccoli is of the single, high yielding Marathon variety (Pollan, 2008). At the turn of the century there were over 5,000 varieties of apples grown in Canada, compared to only 15 commercially-grown today (Lammers-Helps, 2009). The individual varieties are further bred, to enhance their size or pest resistance even if it is to the detriment of the health of the consumer or the animal being raised for their consumption (Pollan, 2008). Modern food processing has allowed for the creation of a myriad of foods that are energy dense, but nutrient deficient, producing for the first time in history people who are simultaneously overweight and malnourished (Pollan, 2008). Many of these processed foods are so altered that they are essentially food product imitations of traditional foods, such as fat-free cheese or sour cream, where the fat is replaced by food additives such corn starch or guar gum (Pollan, 2008). The unprocessed whole foods have also become less nutritious as a result of the changes in agricultural practices, from diversity towards vast monocultures that rely on chemical inputs (Pollan, 2008). These practices negatively impact the soil and plant ecosystem leading to plants that subsist on a ‘fast food’ diet for plants (Pollan, 2008). Data from England
and the States show marked decline in vitamin C, iron, riboflavin, calcium, zinc and selenium in
the food crops tracked since the 1950s (Pollan, 2008). There is a growing body of data
emerging to support the hypothesis that organically grown crops are significantly higher in
anti-oxidant, flavonoid, vitamin and other nutrient content than ‘conventionally’ grown crops
(Pollan, 2008). The lengthening of the food chain has also meant a drop in the nutritive quality
of the foods we consume, because we are eating older food. Fresh foods progressively lose
their nutrient content the longer they are stored. The complexity of the modern food
distribution system often means that even locally-produced, in-season produce experiences a
significant time lag from harvest to regional market delivery. For example, it takes an average
of 9 days for an Ontario field tomato to get to an Ontario supermarket (Zheng, 2010). The
certified organic produce at supermarkets, which is becoming increasingly available, tends to
travel even further on average than conventional produce (Pollan, 2008). Where we buy our
food also has a big impact on what we eat (Steele, 2009). The majority of the population,
which is predominantly urban, sources most of their food at supermarkets (Pollan, 2008).

Before the invention of the supermarket, a myriad of individual producers were part of this
diverse supply network markets; local shops were the primary source of fresh food in cities
(Steele, 2009). Historically, people relied more on traditional food cultures to guide them in
their food choices. Currently, people’s food choices are heavily influenced by the thirty-two
billion dollar / year marketing campaign, designed to sell the 17 000 new nutritionally-inferior
processed food products that come out every year (Pollan, 2008).

2.2 THE CASE FOR ENTREPRENEURIAL UA

A key feature that distinguishes UA from rural is the synergistic integration with the economic,
environmental and social functions of the municipality (Mougeot, 2006). The benefits of a
strong UA sector to a municipality, which often overlap, will be discussed in terms of their social, economic and environmental contributions.

2.2.1 SOCIAL

Research has shown that communities with a strong human-scale (small, locally-based) agri-food sector tend to have an overall increased standard of living, including more entrepreneurs, retail trade, lower crime rates, more parks, schools and citizen engagement (Condon et al., 2010). Sustainable UA can reconnect citizens with their food and environment, with multiple public health benefits (Knight and Riggs, 2010). The public benefits by having increased access to nutritionally superior food. Sustainably-cultivated foods have been shown to contain significantly increased levels of multiple antioxidants, vitamins and minerals (Condon et al., 2010). The nutritional content of many foods decreases rapidly with the length of storage time. The geographical proximity of urban food to consumers can significantly improve the availability of fresher products. As well, UA often carries a spin-off educational component, as new spaces and opportunities are created for citizens (young and old) to engage with and learn about their food, and the environment that supports life in a meaningful way (Zeeuw, 2004).

2.2.2 ECONOMIC

UA is currently an unexploited economic tool in terms of creating a regional food sector that can spur municipal economic growth through job creation, economic diversification and associated amplification of community value due to the greater retention and circulation of revenues within the region (Condon et al., 2010). Metro Vancouver has an urban agricultural sector that currently generates 25% of British Columbia’s gross farm receipts on 14% of the agricultural land (Condon et al., 2010). The full potential of Vancouver’s agricultural sector is not yet realized, as the majority of Metro Vancouver is producing crops for the unpredictable, low-profit-margin, global commodity sector and not high-value crops for the more profitable
Another example of the high productivity potential of UA is found in Sydney, Australia, where UA accounts for 12% of the state’s agricultural production on only 1% of the land base (Pearson et al., 2010). A developed urban food sector could take advantage of the increasing consumer economic and political support for ecologically sound, small-scale and locally farmed products (Condon et al., 2010). UA can significantly contribute to regional food security, especially in light of the development of agricultural land and capacity as cities expand without adequate planning for food production, leaving cities more vulnerable to an increasingly volatile global food system (Knight and Riggs, 2010). UA can address the decline in our population of farmers, by training the next generation of farmers where they are likely to live (currently less than 2% of Canada’s population lives on a farm) (Oswald, 2009). The diverse nature of UA can generate a wide range of economic benefits, including its amenity value, in terms of leisure and recreation sector development (Merson et al., 2010).

2.2.3 ENVIRONMENTAL

Ecologically-sustainable UA can deliver a wide range of ecosystem services to cities (Merson et al., 2010). These can include soil health, pollination, climate-change mitigation, pest control, bio-diversity, water filtration and recharge, and waste cycling (Merson et al., 2010). The current configuration of the industrial food system is unsustainable (Condon et al., 2010). In this system, the net energy inputs often exceed the end caloric value of the food produced (Pearson et al., 2010). Currently, food accounts for about 40% of all freight transport (Knight and Riggs, 2010). The increasing global resource pressure for oil, soil and water will increasingly challenge the viability of the conventional food system and make sustainable UA more competitive and profitable, as the cost of conventional food rises.
2.3 SIGNIFICANT BARRIERS TO ENTREPRENEURIAL UA

Important barriers to the proliferation of successful entrepreneurial UA in Guelph, Ontario, are profitability, a reliable land-base, zoning and policy, regulation, access to credit, product distribution, market share, business expertise, agronomic expertise and access to a skilled labour pool. Issues around profitability, land security and policy and regulation are discussed below.

2.3.1 PROFITABILITY

Currently, farming, urban or rural, is a sub-minimum wage job (Shutzbank, 2010). The average Canadian farmer earns about $8.77 per hour (Shutzbank, 2010). A survey of Vancouver urban farms showed that they are earning a comparable amount, an average of $8.64 per hour (Shutzbank, 2010). This is despite the fact that urban farming, and farming in general, is a highly skilled and time-intensive activity that produces a product on which we depend for our survival. The availability of artificially cheap food (due to multiple factors, including the externalisation of the environmental and socio-economic costs of production, foreign market food dumping and lost-leader supermarket practices), along with increasing costs of production, are some of the reasons that have driven down profit margins (Merson et al., 2010). Recent data has shown that Canadian urban farm enterprises are becoming as, or more, economically viable as traditional crop farming in rural areas (Shutzbank, 2010). This is partly due to some of the advantages of urban farming, such as proximity to market, which allows for direct marketing and a greater capture of the retail dollar. This data is for relatively new urban farmers, without established distribution and marketing systems. It is expected that urban farmers will become more profitable and efficient with experience and market development (Shutzbank, 2010).

2.3.2 LAND-BASE
Access to a reliable land base is a critical resource for the effective development of UA. The cost of land within the city of Guelph and in the peri-urban fringe is considerable and the land value rise that accompanies development makes sub-division a highly profitable option. Without a policy of permanance for UA as a land use, UA tends to be a temporary activity until the land is developed for other uses (Mougeot, 2006).

Currently, cities often have appropriate land for UA that is not accessed for numerous reasons (Mougeot, 2006). Often, accessibility to land is a bigger impediment to urban production than its availability (Mougeot, 2006). Land tenure security tends to be more important than ownership for many urban farmers (Mougeot, 2006). Negotiating lease agreements that support a farmer’s investment in a site, such as infrastructure and soil fertility, can be difficult when available land is being held in reserve for development. That being said, some of the world’s most populous and land-restricted cities, such as in Japan, have a relatively developed and thriving UA sector, mostly due to the resource pressure of land scarcity.

One of the distinguishing features of UA compared to rural agriculture is its adaptability and flexibility in terms of methods of production and land base. Built-up areas, including rooftops, walls and indoor spaces, have been exploited for agricultural production successfully (Mougeot, 2006). There exists a large diversity of production systems to suit an array of environments, including aquaponic, hydroponic, green roofs and container systems. These systems tend to be technologically driven and require high capital investment, maintenance and inputs. The lack of ecological services, such as pest-control and nutrient cycling, among others, offered by a functioning soil ecosystem, creates multiple agronomic challenges for non-land-based production systems. For many products, such as vegetables, such systems often cannot match the productive capacity of land-based growing models. Most cities, including Guelph, have significant contaminated land that is vacant due to the
difficulties and cost associated with soil remediation (Brownfield Strategy, 2002). In addition to the technological and legal complexities and costs associated with brownfield remediation, there is the issue of food safety and the overall suitability of brownfields for most food production (Kaufman and Bailkey, 2000). Food produced in contaminated soils would be more difficult to sell than food grown in greenfields. The Guelph farmer has the option of farming on available greenfield land, avoiding the difficulties and negative image of growing food on brownfields.

2.3.3 ZONING AND DEVELOPMENT POLICY

We are experiencing a historically-unusual phenomenon, where food has been separated from urban planning and development (Veenhuizen and Danso, 2007). There is a growing awareness of the importance of putting food on the planning agenda, and we are seeing a shift in the view of the role of urban planning with respect to food. Despite the growing understanding, there remains a misunderstanding of the role and value of UA for Canadian cities and what policy is required for its development. Until recently, the dominant view is that agriculture and urban development need to be kept separate for a number of reasons, including health, nuisance and environmental concerns (Veenhuizen and Danso, 2007). Although the current zoning by-laws do not explicitly prevent UA, by not clearly recognizing and defining it they do not foster it, leaving UA activity vulnerable. For example, if a neighbour complains regarding front-yard UA, the by-law officer has no clear guidelines to direct their response. Another example is the restriction of commercial sales in residential areas that hinders commercial backyard production in residential areas, such that enterprises like Wally’s Market Garden in Saskatoon cannot sell their produce to their customers and neighbours on the street. With the growing research on the positive role that UA can have on city planning goals, an increasing number of municipalities and regions are beginning to create policies that facilitate and oversee the development of UA. It has been suggested that
because Canada has not recently experienced a food crisis on a sufficient scale to catapult food security to the top of the agenda, UA has not been a policy priority (Lam, 2007).

UA has not been a recognized and distinct land use in the recent history of urban development in the Canadian context (Oswald, 2009). As a result, the existing zoning by-laws often interfere with the development of UA (Oswald, 2009). The Official Plan and zoning map of the City of Guelph segregates groups of land uses and activities (Tomlik, 2009). The nature of UA requires the embracing of multi-functionality, an integration into the urban matrix. Concerns regarding nuisance to adjacent uses, public health issues and environmental concerns are legitimate issues that need to be addressed in UA activities. Positively integrating UA into the urban environment can mean requiring that UA activity be limited to organic methods, and demonstrate a social, environmental and economical benefit to the city. It requires a new set of planning tools and vision. Permaculture principles have been put forward as a useful framework for this end (Tomlik, 2009). UA can be included in the planning and design of development projects, in a similar way to on-site storm water management integration. Previously, the Official Plan for the City of Guelph did not include UA and associated uses as a permanent land use (Tomlik, 2009). Urban agriculture is increasingly being incorporated into municipal planning policy, but it has yet to filter down to the level of bylaw implementation (Oswald, 2009). In addition to allowing UA as a permitted use across the zoning groups, planning has a crucial role to preserve available land for agriculture, within the city, the existing or developing urban fringe (Oswald, 2009). This requires that UA is considered in planning processes, and is a priority so that the inevitable land conflicts that arise as cities change and develop do not eliminate this critical resource (Oswald, 2009).

The establishment of the Guelph-Wellington Food Round Table in 2011 has brought together the relevant stakeholders to work towards a sustainable bio-regional food system. This group has helped the municipality develop UA strategies and create an enabling climate
for agriculture, including UA (Hayhurst et al., 2011). The 2012 City of Guelph Official Plan mentions agriculture as an important economic activity (Official Plan, 2012). The aspects mentioned for consideration are ‘cultural heritage landscape resources’ and ‘natural heritage resources’.

Montreal and Vancouver are other municipalities also working to meet the challenge of setting specific goals for UA and recognizing it as a critical and permanent urban land use. Vancouver is currently working to create zoning and business license options for their urban farmers to meet their policy directive of enlarging their community food assets by 50 per cent increase (Shuztbank, 2010). Currently the City of Vancouver has numerous commercially viable urban farms, but no lands zoned for agriculture or licenses for urban farms to sell their produce (Shuztbank, 2010). Montreal has added four percent of the city’s lands to Quebec’s Permanent Agricultural Zones to be permanently zoned for UA and related activities (Oswald, 2009). The protection of allotment lands in the United Kingdom is another example of effective protection of agriculturally productive urban lands (Oswald, 2009).

2.3.4 REGULATION

In Ontario, urban farms tends to be small scale, more labour intensive, often organic or incorporating ecological management practices, and direct marketing their products. Such farms, similar to other small-scale mixed alternative farms, face many punitive restrictions and regulations that limit their production and financial viability. They do not fit into the conventional centralized, large-scale, often supply-managed food system for multiple reasons, including the high capital investment required to enter supply-management and necessarily large-scale commodity farming, and the ecological unsustainability of such models (Farmstart, 2010). For example, currently in Ontario, a farmer has the option of buying quota at $1.75 million for the right to produce about 90,000 chickens, or produce a maximum of 300 birds a year without a quota and only sell them at the farm gate (Sustain Ontario, 2012).
Conventional livestock-based operations have enormous public health and environmental implications. The most recent Guelph Official Plan does not permit any new livestock-based operations and encourages the phase out of all such operations within the City (Official Plan, 2012). There are numerous examples of functional urban food enterprises in the developed world that incorporate livestock into a small, diverse, ecological farming systems for several reasons, e.g. revenue and source of soil inputs. The rigidity of the conventional food system is currently being challenged by multiple citizen and stakeholder campaigns.

This literature review summarizes the literature on the major potential advantages and challenges to UA, with a focus on entrepreneurial UA for the Guelph, Ontario context. The case for UA includes the social, economic and environmental benefits. The barriers to the development of UA include profitability, land base acquisition, zoning and development policy, and UA-scaled regulation.
3.0 METHODS

A multi-method approach was used, including a literature review, interviews with key informants, a land survey and case studies (see Figure 1). The literature review and interviews with key informants were used to understand the challenges to UA in Southwestern Ontario and identify potential solutions and agricultural enterprises that effectively addressed these issues and could be instructive models for urban farmers.

A focused land survey was conducted in order to address the recurring challenge of competition and access to land in urban centres. In addition, discussions were held with potential institutional and companies with greenfield land holdings about leasing arrangements for entrepreneurial UA.

Case studies of selected enterprises were carried out using personal interviews and a literature and internet search. All of the information gathered was used as the basis for generating two site-specific urban farm concept designs. A landscape inventory and analysis of each site was performed, which informed the location and design of the farm.

3.1 CASE STUDIES

A case study approach was used to elicit key components of successful UA. One of the main research questions of this investigation was: what would a profitable urban farm look like? A search was conducted for existing agri-enterprises that were instructive models for the development of an urban agri-business in Guelph, Ontario.
Figure 1: Methods flowchart
The criteria used to guide the search (see Table 1) was based on the potential for success and the relevance to the Guelph, Ontario context.

**Table 1: Criteria guiding search for agri-enterprises to study**

<table>
<thead>
<tr>
<th>QUALITY</th>
<th>RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>North American based</td>
<td>Need to be relatively easily applied to the Guelph socio-economic and regulatory context</td>
</tr>
<tr>
<td>Profitable</td>
<td>Economic success integral to the long-term sustainability of business</td>
</tr>
<tr>
<td>Sound business planning and management</td>
<td>Good business practices have been identified as an underdeveloped area of many small agri-businesses</td>
</tr>
<tr>
<td>Ecologically sound</td>
<td>Ecological integrity necessary for the long-term viability of an enterprise</td>
</tr>
<tr>
<td>Urban/Peri-Urban Scale relevant</td>
<td>Needs to be applicable in the urban/peri-urban context</td>
</tr>
</tbody>
</table>

The search for potential case study candidates included interviews with key informants, a literature review and an internet search. This search was an iterative process, and was continuously informed by the research process. Five enterprises were chosen for study (see Figure 2). Case studies were conducted using personal interviews with producers either via telephone or on the farm. Each semi-structured interview was conducted with the goal of capturing the relevant experience of each enterprise, and was allowed some spontaneity, using the interview questions as a guide.
Table 2: Agri-enterprises interviewed for case study

<table>
<thead>
<tr>
<th>ENTERPRISE</th>
<th>OUTSTANDING FEATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southbrook Farms, Richmond Hill/Niagara-on-the Lake</td>
<td>Diverse, including an urban agri-tourism site and a viticulture enterprise</td>
</tr>
<tr>
<td>Cookstown Greens</td>
<td>Established grower, specializing in direct high-end restaurant sales of premium produce</td>
</tr>
<tr>
<td>Kawartha Ecological Growers</td>
<td>Distribution co-operative, recently became a not-for-profit corporation.</td>
</tr>
<tr>
<td>Wally’s Urban Market Garden</td>
<td>Multi-site urban land-base.</td>
</tr>
<tr>
<td>Ferme Coopérative Tourne-Sol</td>
<td>Co-operative farm, mostly community shared agriculture (CSA) focused.</td>
</tr>
</tbody>
</table>

The interviews were recorded and transcribed. Clearance from the Research Ethics Board, at the University of Guelph, to involve human participants was granted following an application and review of the proposed research with regard to issues of consent, privacy and the interview process. The submission for ethics clearance included potential interview questions, letter of introduction to research participants and a description of the potential research subjects and how they were to be contacted.

The interview transcripts were reviewed and the answers sorted into 19 categories (see Appendix 1).

The answers were summarized according to the above categories in a Table. A synopsis of each business studied was created. These results were then analysed with respect to common marketing, distribution, profitability and efficiency challenges and strategies.

3.2 LAND SURVEY

Concurrently, a limited land survey of potential urban farm sites on non-residential land was conducted. Enquiries were placed with a City of Guelph councillor and University of
Guelph professor in the Department of Business due to their network of contacts with industry leaders in the Guelph area. Several companies located in the City’s northwest Industrial area were recommended because of the size of their property and past community participation. The northwest Industrial area was also chosen because much of the land had until relatively recently (mid 1980s) been productive agricultural land, thereby minimizing the risk of soil contamination. In addition, three private institutions (outside the northwest Industrial area), St. Joseph’s Health Centre Guelph, Homewood Health Centre and Ignatius Jesuit Centre, were recommended for assessment and included in the study due to their relatively significant greenfield land holdings. Using satellite imagery from Google Earth of Guelph, Ontario, a search was conducted for relatively large tracts of greenspace in the northwest Industrial study area. Nine sites of interest were identified (Figure 2.0). Six of the sites were located in the northwest industrial area (Figure 3.0). Site visits to all locations were conducted and assessed for macro-suitability. Lands that were likely brownfields, actively for sale/lease and had potentially difficult terrain were excluded.
Figure 2: Map of private industrial and institutional sites explored as a potential land base for UA. (Adapted from Google Maps, 2010)
Organizations that owned sites that met this very coarse initial assessment were identified and contacted. Letters of introduction requesting a brief interview were sent via e-mail or fax to the attention of the president via their assistant or chief executive officer (see Appendix 2). Contact information for the organizations was collected either by telephoning the main number or by searching the Canadian Company Capabilities internet database. With the exception of McNeil Consumer Healthcare, Homewood Health Centre and Ignatius Jesuit Centre, the researcher was linked with an organization representative through a personal contact. In the case of McNeil Consumer Healthcare, the initial introduction and was made by a City of Guelph Councillor and for Homewood Health Centre through a referral by a physician staff member. The researcher was introduced to the Ignatius Jesuit Centre key contact through a member of the Board of Directors. Interviews were conducted with interested companies and institutions to discuss issues surrounding the potential use of company land for a commercial urban farm. Topics such as lease arrangements, insurance, water, vehicular
access, site conditions, company development plans, aesthetics and integration of UA with the company profile were explored. The land survey conducted was only a small sample and is not a complete assessment of the potential UA land in the City of Guelph or its urban fringe.

3.3 KEY INFORMANT INTERVIEWS

Case studies

The search for potential case study candidates involved phone and in-person interviews with key informants from a variety of fields, including business, crop science, agriculture and ecology.

Land survey

A brief letter of introduction and meeting request was e-mailed to contact persons at the industrial and institutional sites. Meetings to discuss the proposed urban farms at the respective locations were held with the director of operations at Ignatius Jesuit Centre, as well as with the safety and environmental process manager at McNeil Consumer Healthcare.

Demonstration farm design

Interviews with key informants informed the site selection and business model of the proposed urban farms.

The inventory, analysis and design concepts for both sites were given to the design key informant (DKI) for review. The DKI was chosen for his combined experience and understanding in the fields of ecology, sustainable urban and rural farming, and relevant horticultural technology.

3.4 DEMONSTRATION FARM DESIGN
Site selection for the model farm designs was informed by in-person concept presentations to key decision-making personnel at Ignatius and McNeil.

Based on the case studies and literature review a selection criteria for a core enterprise was created. The core enterprise needed to have the following characteristics: consumer demand, low start-up costs, low regulatory barriers. A conceptual site design for this type of enterprise was developed for the McNeil and Ignatius properties.

**Site inventory**

A brief site inventory was done for each site. Information on soil types, contours and historic surface water courses was gathered from the available soil surveys (Soil survey of Wellington County, 1963). Data on previous uses and property lines was gathered by an in-person survey record search at the Guelph Land Registry Office. Information on buildings, roads, vegetation and present water courses was gathered from Google Maps satellite images. The key information was assembled onto one presentation drawing for each property.

**Site analysis**

The inventory and a site visit informed an analysis of each property. Suitability of each property for the selected core enterprise was determined and presented in a site analysis drawing.

**Concept design**

A concept farm design for an extended season market garden on each site was drawn. The drawings were modelled on Four Season Farm (Harborside, Maine, USA) using Google Maps satellite images. Four Season Farm was chosen as the model for the concept drawings because it is a well-established enterprise with one and a half acres in intensive market garden production. Four Season Farm is a leader in small scale sustainable agriculture and innovation.
especially in winter vegetable production in a cold climate. Four Season Farm also has a beautiful farm stand and presentation gardens to complement their high quality vegetables.

**Feasibility Assessment**

A brief feasibility assessment of the demonstration farm design involved a review of the design proposals by Design Key Informant (DKI).

**3.5 METHODS SUMMARY**

A combination of a literature review, case study approach, land survey and key informant interviews was used to inform the site selection and design of two demonstration farms in Guelph, Ontario. These methods were used to identify the barriers to entrepreneurial UA, relevant to the Guelph context, and identify strategies and enterprises that effectively addressed these issues.

A small land survey examined the potential availability of greenfields for UA. The site selection for the demonstration designs included an exploration of leasing arrangements for UA with company representatives. The site designs were critiques by a DKI with relevant ecology and farming expertise.

The study results are presented and analysed in the next chapter.
4.0 RESULTS AND ANALYSIS

Five different Ontario agri-businesses were selected for investigation. The case study results include a one page summary of the distinguishing characteristics of each enterprise, followed by a description of the success strategies and challenges experienced by a particular company and their application to urban agriculture.

The land survey found that there is substantial potential greenfield land available for UA, and interest amongst the respective land managers in facilitating UA enterprises on these properties.

Key informant interviews with experts in business information, local food and agricultural development highlighted some of the challenges and resources available for urban farm entrepreneurs.

4.1 CASE STUDIES

The case study results include information gathered on the business structure and operation of each organization. A one page summary of each enterprise is presented, followed by the rest of the data for each company, such as success strategies, challenges and urban agriculture applications.

4.1.1 KAWARTHA ECOLOGICAL GROWERS (KEG)
Kawartha Ecological Growers (KEG)

**Location:** West Kawarthas, network of 20 farms

**Business structure:** Not-for-profit

**Participant growers:** Organic certification not required. KEG marketing focuses on authenticity, and relationships.

**Products offered:** Variety of fruits, vegetables, cut flowers, herbs, eggs, meats, maple syrup, honey, flour, pickles and preserves.

**Services:** Unconventional aggregation/delivery, billing, marketing, event organization, catering, product development, grant application.

**Years in operation:** 9 years

**Marketing:** Toronto/Western Kawartha: Winter/summer CSA, farmer’s markets, 20 restaurants.

**Distribution:** Produce delivered to restaurants in Toronto, CSA pick-up points (5 in Toronto, 1 in Oshawa and 2 in Kawarthas) and 3 farmer’s markets using KEG refrigerated van. CSA members choose half the value in weekly basket and one of three basket sizes.

**Employees:** 3 full-time (2 year round, 1 seasonal).

**Founder(s) background:** 12 years in restaurant kitchens, farm start-up.

**Website:** www.kawarthaecologicalgrowers.com

Founded in 2005, KEG distributes and markets products for a regional network of over 20 farms in the West Kawarthas. KEG addresses some of the challenges for small scale producers, such as access to a dependable market and the time and resources required to market and deliver a relatively small amount of product. The organization of KEG addresses these issues of scale, allowing member farmers to focus on production and receive 2/3–3/4 of the retail dollar for their goods.

**Background:** KEG was created in response to a lack of a dependable market for local, sustainable produce in the immediate geographic area of the West Kawartha’s.

**Business structure:**
As of 2010, KEG is a not-for-profit corporation. The mandate is to maximize the portion of the sales profit for the individual farmer, while spreading the overhead costs of the organization amongst the farm network. KEG also assists growers in developing production capacity in strategic areas.

**Future plans:**
1) KEG catering, farm tours/dinners.
2) Working with Slowfood to develop regional agricultural differentiation through events such as the Slowfood picnic.

**Advantages of this business model:**
Resource and information sharing between KEG farm network. Participating farms moving from mixed farms to more specialized production. CSA members active volunteers. KEG farms can focus on production, while KEG takes care of distribution and marketing essentially at cost.
**Distribution and sales channels**

KEG is the distributor for a regional (Western Kawarthas) network of farms. They distribute CSA baskets on specified days Monday to Friday to five delivery points in Toronto, one in Oshawa and two in the Kawarthas (Lindsay and Woodville). Members have a choice of three basket sizes which are picked up weekly. With the two larger baskets, members choose about half the value of their basket and the rest of the basket items are chosen by KEG. KEG also delivers directly to 20 fine-dining restaurants in Toronto. Delivery is also made to three year round farmer’s markets in Toronto, two of which are also CSA pickup points by KEG.

KEG sales volumes consist of about 300 summer CSA members, 75 winter CSA members, 3 farmers markets and 20 restaurants.

**Challenges**

1) Locked out of many farmers’ markets due to multi-farm sourcing.

2) Negative stereotypes of distributors; farmer exploitation, food terminal re-seller.

3) Using farmers’ markets as CSA distribution points; fear that would take customers from other vendors.

4) Flood of cheap imported produce.

5) Majority of population that does not understand the macro-economics of food and the production costs of local, sustainable food.

6) Working within existing supply-managed chicken marketing system which is designed for much larger scale production.

7) High cost of chicken production, high quota/butchering fees and small volume of production.

8) Lack of regional differentiation in approaches to agriculture.

**Lessons**
1) KEG founder believes that the market for local food is about 5% of the general population.

2) Navigating chicken marketing regulations; grow unique chicken and thus be eligible for minimum quota exemption.

3) Able to sell relatively expensive chicken because of superior taste and marketing to those who buy into local food and restaurant chefs looking for exceptional quality.

4) Able to sell chicken because customers are coop members, and not the general public.

**Success strategies**

1) Established independent CSA drop-off points at private establishments.

2) Differentiate KEG from conventional distribution chain through marketing and non-profit status.

3) Authenticity; provide a very regional service. Maintain close relationship with growers and know the stories behind the goods.

4) Minimize debt and overhead by using the existing infrastructure of the farm network.

5) Superior product quality/spoilage reduction by eliminating centralized warehouse storage.

Product is stored by individual growers, and delivered from farm to market within ~24 hrs.

6) Buy quota and sell chicken as single entity, although production is small scale and on multiple farms.

7) Offer diverse CSA product range, in addition to traditional seasonal vegetables.

8) Invest in relationship amongst grower/distributor/end user instead of organic certification.

9) Time start of summer CSA with Strawberry season, “bling in the box”.

**Vision**

1) To see region-specific KEG-type entities established within Southern Ontario. If there was a Niagara EG, a Durham EG with their own regional approach and specialties, could have horizontal trade.
2) Develop existing resources within growers network, which will minimize input costs for the group.

**Areas for growth/market opportunities**

1) Expand CSA now that the production capacity is there. Currently restricting CSA numbers at start of season due to limited strawberry production.

2) Local, seasonal fruit

3) Grains like oats and barley

4) Dry beans

5) Winter market for local produce. Open market, can command premium, for example frozen summer fruit and microgreens.

**UA application**

Alternative marketing and distribution systems.

4.1.2 COOKSTOWN GREENS
Cookstown Greens

Location: Thornton, Ontario (one hour north of Toronto).

Business structure: Privately owned by founder/president David Cohlmeyer.

Landbase: Over 90 acres, with 4 year-round greenhouses and 2 winter root-cellars.

Products offered: Specialty organic produce: salad greens, microgreen seedlings, unique vegetables, edible flowers, garnishes, heirloom tomatoes and root vegetables.

Years in operation: 22 years


Distribution: Direct deliveries by company owned refrigerated van to Toronto twice weekly. Couriers such as Purolator and Erb Transport for outside Toronto. Through specialty food distributors in Toronto and Collingwood area.

Employees: 5 full-time/year round, 1-full time/seasonal. Four Mexican farm workers, 6-7 months/year.

Founder(s) background: Business analyst, food writing, chef/owner of restaurant, caterer, market garden manager.

Website: www.cookstowngreens.com

Founded in 1988, Cookstown Greens grows specialty organic produce mostly for fine restaurants and caterers in Toronto. Salad greens account for nearly 50 percent of Cookstown sales.

Background: Cookstown Greens was started with the intention to demonstrate that high quality and sustainable produce can be provided for the region both profitably and consistently.

Business structure: Cookstown Greens product line is based on quality, uniqueness and consistent, reliable production throughout the calendar year. Winter is Cookstown’s busiest time of year, due to the sales of greenhouse micro-greens and cellared root vegetables. Owned by founder/president David Cohlmeyer.

Future plans: Owner David Cohlmeyer is focusing on increasing efficiency of production over volume expansion for improving the profitability of Cookstown. Currently he is experimenting with extended (4-5 year) crop rotation regimes in an effort to reduce inputs such as fertilizer and weeding labour.

Advantages of this business model: Season extension infrastructure allows for reliable winter production, making the off-season for most growers the busiest time of year for Cookstown.
Challenges

1) Food dumping into Canada since 1990s. As a result Canadians have some of the cheapest food in the world, with respect to their disposable income.

2) Food dumping “not a battle the government wants to fight”.

3) Lack of consumer awareness regarding food attributes. That it is like wine, “you get what you pay for”.

4) Currently very low profit margins in food industry, typically 2-3%, well below the 20% that usually is considered a minimum for running a business.

5) Democratic process is resulting in bad decisions for agriculture, as less than 5% of population involved in agriculture.

6) Lack of helpful extension services, including research into specifics of soil rotation, need to conduct a lot of the experiments

Lessons

1) Increase profitability not through increased volume but through reducing production costs. For example, by expanding the crop rotation, can reduce labour costs associated with weeding (one of the biggest expenses).

2) Increased soil health results in fewer weeds, which reduces labor inputs.

Success strategies

1) Must compete on quality, freshness, uniqueness and special sizes. Unable to compete on price because food is often sold below cost of production.

2) Structure business to bring cash flow at the beginning of the season, maintaining cash turnover and enabling timely bill payment. Micro-greens factored in as a key crop in the original business plan for Cookstown Greens, given their speedy growth and resulting quick cash turnover.
**Vision**

The development of a public awareness and appreciation of the terroir for vegetables and fruit on par with wine.

**UA application**

1) Smaller landbase makes it difficult to grow quality produce, because unable to build up the soil by having relatively long crop rotations.

2) According to David Cohlmeyer, the main benefit is education, not feeding people.

3) Using chlorinated City water for irrigation. Build up of chlorine in the soil becomes toxic to soil life and plants.

4) Could potentially make a living cultivating 2 acres with intensive crops like pole beans, raspberries, but would need to be really good at it. Five to 10 acres would be easier.

4.1.3 **SOUTHBROOK WINERY AND PUMPKIN PATCH**
Farm Name: Southbrook Vineyards and Pumpkin Patch

**Location:** Winery: Niagara-on-the-Lake on highway 55. Pumpkin Patch: Richmond Hill.

**Business structure:**
Owned by founders Marilyn and Bill Redelmeier. Southbrook Winery is a biodynamic, organic, estate winery.

**Landbase:**
Pumpkin Patch: 100 acres
Winery: 150 acres, 75 under grape cultivation.

**Products offered:**
Winery: biodynamic estate vintages, tastings, tours, retail store offers preserves, jams and wine related souvenirs and gifts.
Pumpkin Patch: all season bakery, country market and café, fall festival tourism event and guided school tours.

**Years in operation:** 25 total, winery 19 years old.

**Marketing:** Wines: LCBO, direct retail outlet, internet wine distributors (eg. winetohome.com, agritourism, restaurants, internationally primarily in UK. Pumpkin Patch: direct retail, agritourism and country store

**Distribution:** Direct shipping from winery within Ontario. Third party distributors, internet and retail mostly in Ontario, US and UK.

**Professional background:**
Third generation dairy farming, market gardening, pick-your-own farm

**Website:**
http://www.southbrook.com

Southbrook winery evolved from a dairy farm into a pick-your-own market garden and an award winning winery. Southbrook’s original location is in Richmond Hill, where it retains the “Southbrook Pumpkin Patch”, which mostly functions as an agritourism centre for 2 months of the year, centred around the fall harvest.

**Background:** Southbrook has changed the company focus from pick-your-own berry farm and market garden to wine marketing and production, largely in response a cultural shift away from seasonal consumption and preserving of local produce. Founder Bill Redelmeier attributes this change to the year-round availability of cheap imports.

**Business Structure:**
Owned by founders Marilyn and Bill Redelmeier. Southbrook Winery is a biodynamic, organic, estate winery. The Southbrook Pumpkin Patch is a harvest farm experience business that is open only 2 months of the year. The focus of the business and investment is on the winery. In 2007 Southbrook relocated it’s winery production facilities to Niagara, and became the first Canadian winery to achieve biodynamic certification. Southbrook founder Bill Redelmeir is working to develop the Canadian grape market and Niagara wine brand.

**Future Plans:** To build the Niagara brand, especially in the minds of Canadians. Canadian wine market only 6% of domestic market, in contrast to other wine producing countries where the majority of wine consumed is domestic.

**Advantages of this business model:**
As an agricultural product, Bill notes that wine has several advantages. It has an established and wide differentiation in people's minds and it is preferentially consumed in a preserved form which can be sold all year long.
Distribution and sales channels


Pumpkin Patch: direct retail, agritourism and country store.

Labour force

Payroll labour force; including full-time winemaker, assistant wine-maker, vineyard manager, retail, management and administration staff. Farm labour performed by a team of Mexican migrant workers.

Challenges

1) Although total berry consumption per capita is about the same as 30 years ago, consumption of seasonal Ontario berries is a fraction of what it was 30 years ago due to availability of cheap imports throughout the year. Eg. every basket of imported strawberries displaces a basket of seasonal Ontario strawberries.

2) People prefer fresh over canned produce when available.

3) Large grocery chains such as Sobeys and Loblaws aggressively using Ontario meat, fruit and vegetables as loss leaders.

4) Dumping of agricultural products in Canada below the cost of production.

5) “Government likes cheap food, it keeps people happy.”

6) Educating populace as to why it benefits them to pay a bit extra for truly Canadian goods. The same problem that town main streets have experienced with Walmart.

7) Narrow differentiation with most agricultural products, versus wine where it is as much as a hundredfold.
8) Misleading labelling of foreign goods as Canadian, eg. “Canadian” apple juice from concentrate. There is no apple juice concentrator in Canada. Another example is LCBO labelling Canadian, wines that are composed of 75% imported product.

9) Changes in water regulation, meant that could no longer service the public without a chlorination system.

10) Although almost the same of people where coming out to a u-pick operation they were picking a fraction of the volume as 10 years ago.

Lessons

1) Wine is the only agricultural product that people prefer preserved rather than fresh.

2) Wine is the only agricultural product that people buy by origin.

3) Input costs in Ontario are high because of cool climate and labor policies.

4) Place retail facility where it is highly visible, accessible, receives the maximum target traffic, is one of the first stopping points on winery route and has the least political/environmental/bureaucratic potential issues that might lead to delays and additional expense.

5) Follow the European winery example: separate public and manufacturing face of business. Invest in the aesthetics of retail centre, but keep manufacturing facility simple, cheap and flexible to expansion.

6) Good marketing is as important as a good product.

7) Wine business is all about marketing. Providing as many unique stories as possible, because wine is usually shared with others.

8) Need to do something with the production that you have.

9) A sustainable operation must be economically sustainable first.
10) Much easier to market a luxury than a necessity. “A luxury is never too expensive, a necessity is always too expensive.”

11) “Marketing is value-adding. The story is part of the value; do not separate the two. It’s the same thing.”

**Success strategies**

1) Focus on wine: Wine allows the preservation and sale of an agricultural product 12 months a year in a preferred form.

2) Consistently higher input costs of Ontario production means that cannot compete on price, must compete on quality and brand.

3) Be distinctive, e.g. architecturally significant and true to what you aspire to do. Build image, make a statement. In case of Southbrook LEED facility, biodynamic, organic, estate bottled. Environmental landscaping that communicates ecological values but also high level of aesthetic care. Support local economy through business purchasing choices. Attention to detail, including the color theme of retail building and retail packaging.

4) Southbrook Pumpkin Patch: focus on farm experience, something Loblaws cannot offer.

5) Identify what attributes are necessary for marketing your product and make decisions strictly according to this criteria.

6) Choose the best possible growing microclimate.

7) Focus marketing resources on the best customers, such as organizing free events and tastings for known client base. Grow by word-of-mouth method, using existing network of customers.

8) If wanted to make Southbrook Pumpkin Patch more profitable, would look towards extending the season with all sorts of value-added crop products.

**Vision**
Develop Canadian grape market, by building the Niagara wine brand, and bring wine consumption more in line with other wine-producing countries of the world, such as United States, Australia, Chile, Argentina, EC countries majority of the wine that is drunk is a domestic product. In contrast to Canada, where only 6% is a domestic product.

Areas for growth/market opportunities:

1) Pumpkin Patch: People interested in farm experience, especially around harvest time.

2) Canadian wine market only 6% of domestic market, in contrast to other wine producing countries where the majority of wine consumed is domestic.

UA application:

The ability of a small farm operation to sustain a family (defined as not being compelled to find work off the farm), depends on the people running it, if they like it and what kind of story they can tell.

4.1.4 FERME COOPERATIVE TOURNESOL
**Ferme Cooperative Tourne-Sol**

**Location:** Les Cedres, Quebec

**Business structure:** Workers Cooperative

**Landbase:** 12 acres rented from an organic grain farm

**Products offered:** Certified organic vegetables, flowers, seeds, seedlings, and herbal teas. Seasonal availability.

**Years in operation:** 9 years

**Marketing:** CSA 60%; Farmers Market 30%; farm sales 10%; started online seed catalogue.

**Distribution:** Distribution of CSA baskets at 2 delivery points weekly during season. One size of basket can be picked up either weekly or biweekly. Contents of the week’s basket compiled by CSA members from a display, according to a list.

**Number of employees:** 5 members/owners, 2 hired seasonal workers

**Previous background:** Worked on farms in varying degrees of responsibility. Studies in agricultural economics, engineering, ecology and plant science.

**Website:** www.fermetournesol.qc.ca/eng/welcome.html

Founded in 2004 by a group of five farmers who met while studying agriculture at university. Tourne-Sol now produces a variety of certified organic vegetables, seeds, seedlings and herbal teas on 12 acres of rented land for a 250-member CSA basket program, a farmers market and online seed catalogue. It is a cooperative composed of the five founding members. One of the team goals is to keep the work interesting for everyone, while limiting the business size to its 5 members and two seasonal workers.

**Background:** Tourne-Sol was established as a workers cooperative model. This fit in with founders values and principles with regard to social justice, the environment and good food. As well, this model allows for work load flexibility for the members, such as maternity leave and part-time positions.

**Business structure:** In a workers cooperative, the members are the workers and owners. Tourne-Sol is composed of a small team of five members. All of the members are also part of the business council. In this business model, three persons minimum legally required to keep the co-op going. If a member decides to leave the co-op; whatever funds where lent to the coop are paid out plus an annual interest rate. There is no buying out option. Members cannot benefit personally from the sale of coop assets. Business decisions are usually made by consensus, although the co-op has officially adopted a 60% majority rule, as a last resort.

**Future plans:** The members intend to maintain a high ratio of farmers/owners to hired workers and principally rely on owner workforce, not a hired labor. In addition to existing production, Tourne-Sol is developing seed production as a business and exploring the profitability, agronomic and workload timing of berry production. They currently have 2 year old trial plots of fall raspberries, blueberries and blackberries and beginning to take data.

**Advantages of business model:** The members credit this model with a greater worker commitment to the success of the business and engagement in its operations. The lack of personal ownership of farm assets encourages the maximization of co-op resources and investment in relatively immediate profitability. There is a disincentive to invest in farm assets and debt to generate wealth.
**Labour Force:**

There are five member owners and two hired seasonal workers.

The member commitment labour targets are:

- **Main Season (May-mid-September)** 50-52 hrs/week
- **Shoulder Season (April, end-September-November)** 40 hrs/week
- **Winter:** 325 hrs, schedule based on particular responsibility.
- **Member pay** is spread out evenly throughout the year; their pay cheque is always the same.
- **Member pay scale** is ~$17/hour. This is commensurate with industry standards, where $15 plus benefits is used for forecasting and planning (Currie, 2013).

**Business structure**

Ferme Tournesol is a workers cooperative (co-op). The members are the workers and the owners. The business planning and development stage for this company entailed having three members work full-time for 6 months. There is a small team of five members. All members are part of a business council. A minimum of three persons is legally required to keep the co-op going. There is no buying-out option, if a partner decides to leave co-op; whatever funds were lent to the co-op are paid out, plus an annual interest rate. The members cannot benefit personally from the sale of coop assets. In practice the members always try to make decisions by consensus, although officially they have adopted a 60% majority rule as a last resort. The members want to maintain a high ratio of farmers/owners to hired workers and maintain a reliance on owner workforce, not hired/seasonal labour. This business model allows for work-load flexibility for the workers, one person can take a maternity leave or work part-time and can be replaced. The sales volume consists of 250 CSA summer shares and a weekly farmers market stand from May-October.
**Challenges**

1) Consensus decision making is more time consuming than majority rule.

3) Creating business structure, budget, business plan was a big initial investment. Some members thought that a hindrance initially.

3) Efficiency of harvest led to a big organization system with a daily workflow and wash station modification.

4) Limit to how much one can do with the same land base; do not want to increase the work load, but would like to make more money.

5) Members are earning enough to cover living expenses, but are challenged financially when it comes to buying a house, or retirement planning.

6) Although can produce winter storage crops well, do not have heated/draft-free work facilities. Although there is money to be made, none of the members have the drive to do this relatively unpleasant work and the associated winter marketing.

**Lessons**

1) It is critical to know your partners really well and have previous experience in decision making and organizing a project together before embarking on a worker’s co-op model together.

2) Keeping team of partners small and involved in business council improves overall quality of decision making, keeps everybody informed and onboard with decisions.

3) It is critical to spend time thinking about what your life goals are and how that fits into the business.

4) Holistic farm business management and non-violent communication have been a valuable tool in helping co-op partners work together.

**Success Strategies**
1) Co-op members have complementary skills for a strong team.

2) Consensus decision making leads to fewer mistakes and decisions that everyone is comfortable with and pushes forward.

3) Initial investment in creating a business structure has improved the efficiency of meetings and decision making.

4) Use common sense; do not apply all rules and structures unless they are needed.

5) Keeping clear goals helps avoid inefficiencies; re-evaluate long term goals and overall plan as a team a couple of times a year.

5) CSA and farmers markets are complementary sales outlets.

6) Minimize volatility/stress by avoiding reliance on seasonal hired labour.

7) Minimal or non-existent debt is important.

8) Analyse the profitability of a product/service prior to leaping into it. Only go ahead with ideas that make economic sense.

9) Careful planning of product/service implementation is important.

10) Avoided complicated health regulations by sticking to vegetable production. Do not do any sampling at market to avoid health regulations.

**Vision**

One of the team goals is to keep the work interesting for everyone. This will likely result in the development of sub-mini businesses within the business, and some partners might specialize in certain fields.

**Areas for growth/market opportunities**

1) Experimenting with cooperative internet buying clubs.
2) Have considered commercial kitchen related production, but feel it is a different business from growing vegetables and perhaps requires a devoted full-time person and knowledge that they do not necessarily have.

3) Have done some financial analysis on canning, and have not found that there is a lot of canning that would be economically worth doing for them at this time.

4) Big demand for winter crops, including storage crops, microgreens, frozen berries.

**UA application**

Ferme Tournesol is an example of effective small farm management and production methods on a leased land base.

4.1.5 **WALLY’S MARKET GARDEN**
Farm Name: Wally’s Urban Market Garden

**Location:** Saskatoon, SK

**Business structure:**
Owner/farmer operated sub-acre urban farm.

**Landbase:** 12 lots that total about ¾ acre.
The lots are composed of a core landbase that can count on year after year (belongs to owners/relatives) and a second shifting landbase, that is more transient and can change from year to year. There are no formal land lease agreements.

**Products offered:** Main growing season: quick growing salad greens, baby greens and micro-greens, heirloom and specialty variety vegetables.
Winter products: high value storage crops, microgreens, pea and sunflower shoots.

**Years in operation:** 12 years as urban farm, 6 years farming on rural land.

**Marketing:** Farmers market, restaurants.

**Distribution:** Owner/farmer makes weekly deliveries to restaurants/market.

**Number of employees:**
Owners/farmers Wally and Gail. Occasional help from relatives, friends and exchanging work for food. Avoid payroll labour force.

**Website:**
www.marketgardening.com/wallysmarketgarden

With his partner Gail, Wally runs a sub-acre farm on multiple residential locations throughout the city of Saskatoon. Some of the plots are located in people’s backyards, the core landbase is owned by the farmer or the farmer’s family members.

**Background:** Prior to switching to an exclusively urban landbase, Wally and Gail farmed a 20 acre rural site. The farmers found the urban location more profitable.

**Business Structure:** The business model relies on intensive production of multiple harvests of high-value crops. Production and sales extend into the winter season, with high value storage crops, microgreens, pea and sunflower shoots. Wally has named this method of farming as SPIN farming (Small Plot Intensive Farming) and has developed a series of proprietary learning guides addressing the business and growing practices of this type of enterprise. Marketing is mostly through the farmer’s market and direct restaurant sales.

**Future plans:** Wally sees restaurant sales as a growing market for his produce and is actively developing the chef-farmer connections in Saskatoon. He is also currently working on publishing a SPIN farming book.

**Advantages of this business model:** Extended urban micro-climate, reduced pest and wind pressure, access to municipal water for irrigation year-round and proximity to their customer base. Dense urban population can make it easier to access labour in non-conventional ways.
Challenges

1) Residential greenhouse production might not be appropriate for UA due to zoning issues.

2) Takes 6-10 years, depending on aptitude, to become an accomplished grower.

3) Affordable, dependable labour.

Lessons

1) Good planning, workflow and essential infrastructure such as refrigeration can reduce the learning curve to becoming an accomplished grower.

2) Start small, keep costs low. Increase production only in measured, careful steps.

3) Intensity of production is directly related to the size of the farm. The smaller the landbase, the more intense it needs to be.

4) If engaging a payroll type of labour force, that represents a very advanced form of farming at the expert level. Need to understand what is necessary in terms of labour and efficiency, have an established market, well developed sales channels.

5) Unlikely that one can lock in residential lots for 5 years or more. Perhaps more appropriate for institutional/industrial lots.

6) Formal land-lease agreements might be beneficial in clarifying expectations. Wally/Gail have not experienced the need to sign formal agreements in their business.

Success strategies

1) Good organization of work flow.

2) Superior freshness improves the value of product to restaurants by reduced cull-rate and better flavour quality.

2) Proximity to market: saves on delivery/distribution time.

3) Year-round production of sprouts and micro-greens to restaurants. These products are relatively expensive and of low quality in the wholesale market.
4) High-tunnels use can further extend the microclimate advantage of city growing season.
5) The urban growing environment allows for potable/city water for irrigation and washing.
This avoids potential issues with health regulations.
6) Steady, consistent, reliable service to restaurants.
7) Efficiency of harvest and quality of produce through good refrigeration facilities. This requires an investment of approximately $5,000 - $10,000.
8) Low initial capital input, shorter time to profitability: farm equipment consists of rototiller, hand tools, walk-in cooler.
9) Multiple cropping of beds in a single season.
10) Intensive growth space organization.
11) Focus on the most high-value crops and intense production method to maximize small landbase. CSA sales channel might not be appropriate for the urban grower due to expectations of relatively low value crops such as corn and pumpkins. Farmers market and restaurants might be the most appropriate sales channels.
12) Limit planting to what one can reasonably weed and harvest.
13) Avoid payroll type of hired labour, as costs can be 25% or more of entire overhead.
Engage labour in “creative ways”.
14) Have a core stable landbase.

**Vision**

1) Formula for growth of farmers’ markets: differentiation of focus of rural/urban and peri-urban production with the farmers’ market as the distribution point.
2) “Ultimate end-point of an acre of SPIN farming, would be the most intensive type of production on the entire acre of land growing the highest value crops, all slated for local production.” This model has the potential for profits comparable to greenhouse production,
but without the same associated infrastructure costs that are a high barrier in that type of production, such as the greenhouses themselves and the transportation costs.

3) Need an organized effort by local farmers to coordinate production so that restaurants can know what to expect; that is what is needed to compete with outfits like Sysco.

**Areas for growth/market opportunities**

1) Restaurants, developing the chef-farmer connection. This market is opening up compared to past.

2) Winter market, especially of high value greens, might be appropriate in peri-urban/urban – other than residential zoning areas.

3) Value-added potential; for example, a quarter acre basil operation making pesto, or a hot pepper farm.

**Advantages of urban location**

1) Use of potable/city water for irrigation/washing: avoids potential issues with health regulations.

2) Growers selling to restaurants may be facing regulations for water certification and washroom facilities for workers.

3) Focus on the most high-value crops and intense production method to maximize small land base. CSA sales channel might not be appropriate for the urban grower due to expectations of relatively low value crops such as corn and pumpkins. Farmers markets and restaurants might be the most appropriate sales channels.

4) High-tunnel use can further extend the microclimate advantage of city growing season. Invest $5,000-10,000 in good refrigeration.

4.1.6 CASE STUDY ANALYSIS
With the exception of Southbrook Winery, the majority of the enterprises sold their products and services directly to their respective consumers. This is consistent with an overall increase in direct marketing and sales for Ontario farms (Farmstart, 2010). Small enterprises need to do this if they are to capture a share of the market for their products, and a greater portion of the revenue. This alternative marketing and distribution system entails increased marketing efforts and customer interaction on the part of the enterprises (Farmstart, 2010). The companies identified product quality and authenticity as the key to their competitiveness. With the exception of Wally’s Market Garden, these organizations rely on seasonal employees in addition to a full-time labour force and all had a secure landbase, which was either leased or owned by the organization/founder or their family members.

Low profit margins were identified as a major challenge by these enterprises. Strategies for maintaining a profitable business included reducing the cost of production through greater efficiency and planning and careful ongoing analysis of the profitability of each product and service.

4.1.6.1 LANDBASE

In addition to a ¾ acre permanent landbase, Wally’s Market Garden uses a shifting landbase, that may change annually, to take advantage of urban yards that become available. Wally’s ¾ acre core landbase is geographically consolidated, which is important for work flow efficiency. Wally’s Market Garden relies on intensive production methods for high-profit crops, achieving greater yields and profits per acre than conventional cropping methods. The constraints of a smaller landbase are addressed through intensive multiple cropping, season extension and assiduous planning in order to achieve the high yields required for profitability.

4.1.6.2 SOIL FERTILITY

According to David Cohlmeyer, director of Cookstown Greens, a challenge of a small landbase is the lack of long rotation periods which can compromise soil health and crop
quality. Historically, very productive urban market gardens relied heavily on urban waste for nutrient inputs such as horse manure in the Parisian market gardens (Reid, 1991). Similarly, today’s urban farmers take advantage of the relatively free urban inputs. For example, Growing Power, a UA farm in Milwaukee USA, collects food waste from local cafeterias, produce stores, coffee houses and breweries to compost for its intensive urban greenhouse and market garden production (Growing Power, 2013).

4.1.6.3 MICROCLIMATE

Finding the best possible growing microclimate was an important deciding factor for the location of Southbrook Winery. Wally’s Market Garden capitalizes on the urban microclimate to gain an additional two to four weeks of frost-free growing conditions.

4.1.6.4 DISTRIBUTION

The majority of these enterprises deal almost exclusively in direct sales and have created alternative distribution systems for their products. Wally’s Market Garden reported greater flexibility to meet their clients’ needs due to their urban location; a delivery trip was not a big drain on their manpower. In addition, the urban-based grower had the advantage of using his farm infrastructure and not having to invest in a refrigerated van. Kawartha Ecological Growers evolved as a response to the challenge of finding a market for the products. This alternative distribution system allowed access to the Greater Toronto Area market for the growers.

4.1.6.5 MARKETING

Market and sales channels establishment was also key to staying in business. According to Bill Redelmeier of Southbrook Winery, good marketing has been as important as a good product. Redelmeier states that marketing is akin to value adding. Redelmeier focuses on creating as many stories as possible around their product, because wine is usually shared with others. One could make the same argument for food. Kawartha Ecological
Growers markets almost exclusively to their members. According to KEG founder Marc Trealout, the market for local food is about 5% of the general population. Thus KEG markets almost exclusively to their membership, and are able to communicate the value of items, such as superior taste, that are more expensive than the common market price. There is a $20 fee to become a member. Effective marketing requires a considerable time investment from a grower that does not use conventional distribution channels. Kawartha Ecological Growers is a strategy for the member producers to focus on production and become more specialized, by using the cooperative marketing and distribution system essentially at cost. Cookstown Greens has chosen to invest in the infrastructure for winter greens and root crops, which has enabled them to take advantage of the steadier income of a year-long market. Winter is the busiest season for Cookstown Greens. This strategy has also been discussed by Eliot Coleman, a grower in Maine who uses season extension to increase yields and market time (Coleman, 2009). In particular, Coleman has developed the use of mobile greenhouses to reduce the pest and soil problems associated with stationary greenhouse production. The winter vegetable market is commonly identified as a market gap. Kawartha Ecological Growers has also expanded into the winter market through their winter CSA’s.

Authenticity is an important element that these companies use to differentiate themselves and win market share. Kawartha Ecological Growers focuses on providing a very regional service and maintaining close, positive relationships with the growers and their customers. The regional ethos is also expressed in the business purchasing choices of these companies.

4.1.6.6 CHANGES IN EATING PATTERNS

These organizations have evolved as a response to the flood of cheap imported food in our markets. The evolution of Southbrook farms from a pick-your-own berry farm to wine production was a result of the general changing cultural eating patterns away from seasonal
consumption and home canning towards year-round consumption of cheap imports. Farms like Ferme Tournesol are a reaction to some of the socially and ecologically destructive practises behind cheap food. Appreciation and respect for flavourful and fresh food is also a shared value amongst these enterprises. The entrepreneurs interviewed expressed a common leading challenge facing their businesses: the flood of cheap food on the market. This is expressed in different ways, either as cheap imports in the form of food dumping, or the apparently common practice by major supermarkets of using local Ontario produce as loss leaders. Another major challenge is the public understanding around food, including issues such as the macro-economic and political forces that make the average Canadian family food budget one of the lowest in the world. In addition, there is little differentiation when it comes to fresh produce, as compared to wine where the vast range in cost is understood to reflect product value. These factors together have driven down profit margins for many producers to a precariously low point.

4.1.6.7 QUALITY

All the enterprises in this study are competitive because their products are of exceptional quality, taste and freshness. Producing a product of superior quality and freshness is key to the success of these companies. These companies cannot compete on price; thus, they must compete on other attributes such as freshness, uniqueness and quality. Kawartha Ecological Growers improve freshness by eliminating centralized warehouse storage time, and associated infrastructure costs through the use of the existing farm infrastructure. Product is delivered from individual farms to market within 24 hours. Wally’s market garden capitalizes on the proximity to market to deliver exceptional freshness.

These enterprises use either organic, or biodynamic growing practises. The producers also focus on high-value crops, except where they grow for a CSA program.

4.1.6.8 EFFICIENCY AND PROFITABILITY
Agricultural profit margins are approximately 2-3% or less, far below the recommended 20% for financial viability (Currie, 2013). The low profit margins create an unforgiving financial climate for growers. Producers need to be highly skilled growers, a process that takes about 6-10 years according to Wally Satzewich, in order to break even. The entrepreneurs studied have managed to stay in business because they are able to meet these challenges in ways that make sense for their specific situation. David Cohlmeyer stays profitable by working to reduce the costs of production, rather than increasing volumes. This is reiterated by the other growers, who focus on good planning and workflow practices to reduce costs. This includes measures such as avoiding potential delays, which lead to additional expenses, in making decisions about business location and production methods.

At all levels these companies express a keen attention to detail, from the business structure and production practices to imaginative and attractive packaging of their products. In addition to fastidious planning, these companies carefully analyse the profitability of new products and services, and base their decisions on this information. Exceptional organization is also necessary for providing consistent and reliable products to customers, especially important to restaurants suppliers. These companies are constantly re-evaluating existing practices and working to improve efficiency and profitability.

4.1.6.9 COOPERATIVE BUSINESS STRUCTURE

The cooperative business structure of Ferme Tournesol requires significant investment in communication and decision-making time. This cost is offset by the benefits of a highly skilled and reliable team, which minimizes labour volatility and reliance on seasonal hired labor. The cooperative structure is also a strategy to avoid farmer burn-out.

4.1.6.10 FOUNDER BACKGROUND

The enterprises are all well established, operating from 9 to 25 years. Some of the farmers had previous farming experience and grew up on farms, others had degrees in
agriculture and related fields, while David Cohlmeyer came to farming from a business and food preparation background. Wally Satzewich, in Saskatoon, initially started as a rural grower, but found it more profitable to focus on intensive urban production.

4.2 LAND SURVEY AND KEY INFORMANT INTERVIEWS

The land survey showed that there is significant potential greenfield land in Guelph for UA applications. Discussions with private companies and institutions with such a greenfield landbase revealed an interest to explore the possibilities of entering land and procurement agreements with urban farmers.

**McNeil Consumer Healthcare**

McNeil Consumer Healthcare was the only organization amongst the six Northwest Industrial Area businesses that responded to the researcher’s letter of introduction and follow up phone-calls. The Environment Health & Safety Manager discussed the idea of a lease arrangement between an urban farmer and McNeil Consumer Healthcare for a commercial urban farm operation during a personal interview and tour of facility with the researcher. He expressed that McNeil would be open to such an arrangement and made a request to forward proposals for review.

**Land use**

The McNeil site consists of 55 acres in total, of which 44 is naturalized and 11 acres are taken up by buildings. Some land, right next to the building, is reserved for potential development. The majority of the naturalized area effectively acts as a buffer from surrounding industrial uses and potential nuisance conflicts. The company has goals to be a “community participant”; to that end, McNeil is a participant in organizations such as Trees for Guelph, has an employee wellness program, and provides a garden for the 350 people who work there. McNeil would like to see improved access for its employees to get to work by bike,
public transit and walking trails. They are currently working with the City to improve industrial bus routes and trying to create trail connections to the site via the railway spur. With the exception of the Health Canada mandated regulation of a one foot strip around the building, there is no fertilizer and pesticide use on the property.

Homewood Health Centre

Don Webers, a horticultural therapist at Homewood Health Centre, was contacted and agreed to an interview. Don expressed that Homewood has a philosophy and a commitment to providing healthy meals to their staff.

Customer base

The Homewood cafeteria serves approximately 600 people daily. He felt that there was an opportunity for a procurement arrangement between the organization and an urban farmer. At one point Homewood had an onsite farm and produced much of their own produce. This began to change in the early 1970s; the details about this information are available in the Homewood library.

Homewood goals

Don expressed that proposals would be analysed on how they fit in with the Homewood goal of improving patient care. Don identified some areas for exploration, such as how the enterprise would fit in with the ongoing horticultural therapy and how cafeteria staff and hotel services would handle the ebb and flow of seasonal market produce.

Land use

The potential locations of an urban farm on Homewood property were discussed, and Don suggested the large lawn near the Arthur Street North entrance as a possibility. Security, wildlife and visitors, in addition to patients who use Homewood grounds, are issues that need to be considered. Proposals could be forwarded to the Chief Executive Officer for review.
Other Homewood staff who would have a stake in this proposal would be the manager of hotel service, the manager of environmental services, and the head of security.

**St. Joseph Health Centre**

A telephone conversation with the Chief Executive Officer of St. Joseph Health Centre revealed that the organisation was planning to build in the next 5 years on most of the remaining arable land at their Westmount Road Guelph location. Thus St. Joseph's was deemed unsuitable for an urban farm at this point.

**Ignatius Jesuit Centre**

The chief executive officer of Ignatius Jesuit Centre responded and agreed to an interview. A meeting with the chief executive officer, Jim Profit, the director of operations, Lisa Calzonetti and the researcher was held to discuss the feasibility of an urban farm enterprise at the facility. Jim Profit expressed that Ignatius would be willing to review various proposals for a commercial urban farm. Ignatius Jesuit Centre actively works to promote local sustainable agriculture. Currently, they rent land for agriculture at a rate of $50 per acre. He expressed that this enterprise needs to be compatible with the existing Community Shared Agriculture and Organic farm. However, a market garden that specialized in winter production would be a good fit and not create undue competition for the existing farm. The possibility of livestock-based enterprises was discussed, because Ignatius is zoned as both agricultural and institutional. In addition, Jim Profit expressed the possibility of using some of the existing infrastructure, such as the barn buildings, for livestock. At one point Ignatius had cattle and other livestock, but this was phased out as the number of resident Jesuit priests to care for the livestock decreased.
These results show that Guelph has significant greenfield land (approximately 300 acres, 40 on the McNeil site and 260 on the Ignatius site) that can potentially be accessed for various UA applications. The industrial and agricultural zoning would allow for greenhouse production, something that might be inappropriate on residentially-zoned land.

**Key informant interviews**

Key informant interviews with persons employed in business data, agricultural economic development and local food and procurement helped identify potential businesses for case studies and challenges to urban farm entrepreneurship.

Personal and telephone interviews with University of Guelph librarians who specialized in market research and business information showed that there are various databases purchased by University libraries, but they are usually national, international or global in scope. Statistics Canada carries out some food-related surveys, on aspects such as food consumption and expenditure, with a focus on the three major Canadian cities.

Agricultural and local food business development experts revealed an agreement that in order to entice entrepreneurs into farming, hourly wages between $20-30 are needed. Alexandra English, FarmLINK Ontario Coordinator at Farmstart, mentioned programs such as Environmental Farm Plan, Growing Forward and Farm Credit Canada as organizations that provide support for farmers, including loans. She also noted that there is a reduced tax rate for actively farmed land. Guelph Wellington Local Food project coordinator Kate Vsetula noted that having a non-profit arm allows access to grants. Vsetula felt that there was a potential market for mobile abattoirs and markets, but that regulation would be an issue. She felt that local supermarkets might be good potential distribution outlets for local food.

A discussion with the manager of procurement at the University of Guelph hospitality services revealed the challenges that this relatively large institution is having in meeting its
goals of procuring mostly local food for its customer base. One of the main challenges is the relatively small volumes per delivery, which lead to much more frequent drop offs that clog up the loading areas. The University goes to local produce auctions, such as the Elmira Produce Auction, to try and procure the volumes they need. This institution is flexible in terms of the grading of product; they often buy seconds that grocery stores cannot use. Seasonal availability is an issue, as the summer is a slow time for the University.

4.3 DEMONSTRATION FARM DESIGN

The McNeil Consumer Healthcare and the Ignatius Jesuit Centre sites were both selected for demonstration farm designs based on the results of the land survey and key informant interviews. The land survey showed that these sites would have fewer regulatory barriers to UA because of their zoning designation, industrial for McNeil and institutional/agricultural for Ignatius. Meetings with the safety and environmental process manager at McNeil and the director of operations at Ignatius also revealed that these organization were receptive to UA proposals on their properties. The results of the site inventory, site analysis and concept farm designs are presented in Figures 4 – 11.

The land inventories for both sites revealed ample capacity for UA enterprises. Both sites are greenfields, farmland developed relatively recently, without the soil contamination concerns associated with older former industrial areas. A review of the County of Wellington soil surveys showed that both sites have significant areas of fertile, well draining, relatively stone-free and level Guelph Loam. Both sites have good vehicular access and visibility from the road. The Ignatius property has been certified organic for many years. The McNeil property has been managed without the use of pesticides and fertilizers for some time. A site analysis looked at the existing uses and landscape inventory to identify the most suitable location for growing crops and/or retail facilities. The proposed farm location was chosen for
maximum visibility from the road for retail and marketing activities, and for suitable growing conditions.

Winter greens and high value crops for the winter market were chosen as the core product of the proposed farm, based on the market gap identified by the case studies. The particular form of winter production was modelled on Four Season Farm, operated by Eliot Coleman and Barbara Damrosch (Coleman, 2009). The use of passive mobile greenhouses requires relatively low capital input when compared to the costs of installing and maintaining commercial heated and lit greenhouses. The passive greenhouse technology is scalable to a small agricultural operation, as well as being ecologically efficient. In addition to not requiring continual energy inputs to maintain heat and light, the mobile design addresses some of the major issues with greenhouse production, such as pests and diseases, as well as lime build-up in the soil, which is important in Guelph where the water is hard.
Figure 4: Institutional Site Inventory
A key informant review by a leading ecologist and farmer, Mathis Natvik, of the final concept designs for each site revealed some important problems and potential solutions with the design implementation. The industrial farm placement would make crops and greenhouses vulnerable to North-West wind freeze events due to the exposure of the site to the North-West prevailing winds. The effects of wind would also be an issue in the summer, as it would create very wind-whipped plants. Natvik recommended orienting crops and greenhouses away from the Westerly winds, along Highway 86 and planting windbreaks. Similarly, it was recommended that crops and greenhouses be placed in sheltered areas. The placement of the farm on the institutional site was noted by Natvik to likely be a frost pocket. A possible solution would be to place the retail and marketing facilities in the highly visible frost pocket, but locate the cropfields in the other suitable crop areas, further upland.
On both sites Natvik expected high vole pressure due to the surrounding grasslands. His recommendation was to have a vole plan which included incorporating sunken vole barriers into the greenhouse design, as is also suggested by Coleman who devotes an entire section to dealing with voles (Coleman, 2009).

The issue of using City water on the industrial site was a concern due to the associated cost, as well as the environmental cost of using a relatively highly processed product which carries a high energy cost. Natvik suggested alternatives such as harvesting the considerable rooftop water off of the large McNeil buildings, as well as drilling shallow or deep wells. Both of these solutions have their problems such as storage with regard to roofwater and risk of contamination with drilling deep groundwater wells within City limits. Natvik also noted that aside from the initial planning, creating the type of diverse and successful farm such as the Four Season Farm model in Maine required a farmer who was knowledgeable and experienced enough to be able to problem solve throughout the season in response to micro weather patterns and other fluctuations. Natvik felt that the biggest limiting factor to the success of such an operation would be finding such farming expertise and reliable farm labor.

In addition to the winter market, Natvik noted that the Guelph climate and rich soil is conducive to berry production. Perhaps a berry CSA would be a good production focus.

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Figure 6: Institutional Site Analysis
Figure 7: Industrial Site Analysis
Figure 8: Institutional Site Farm Concept
Figure 9: Industrial Site Farm Concept
Figure 10: Institutional Site Farm Detail
Figure 11: Industrial Site Farm Detail
4.4 KEY DESIGN INFORMANT CRITIQUE

A key informant critique of the final concept designs by a leading ecologist and farmer, revealed some important issues and potential solutions with the design implementations.

Wind

The McNeil farm placement would make crops and greenhouses vulnerable to northwest wind/freeze events due to the exposure of the site to the northwest prevailing winds. The effects of wind would also be an issue in the summer, as this would create very wind-whipped plants. The ecologist recommended orienting crops and greenhouses away from the westerly winds, along Highway 86, and planting windbreaks.

Frost pockets

Similarly, it was recommended that crops and greenhouses be placed in sheltered areas. The placement of the farm on the Ignatius site was noted to possibly be a frost pocket.

Vole pressure

On both sites, the key informant expected high vole pressure due to the surrounding fields. His recommendation was to have a vole plan which included incorporating sunken vole barriers into the greenhouse design, as is also suggested by Coleman who discusses dealing with voles in more detail (Coleman, 2009).

Water

The issue of using City water on the industrial site was a concern due to the associated cost, as well as the environmental cost of using a relatively highly-processed product which carries a high energy cost. The informant suggested alternatives such as harvesting the considerable rooftop water off the large McNeil buildings, as well as possibly drilling shallow or deep wells. Both of these solutions have their problems such as storage with regard to roof water and the difficulty of obtaining permission to drill wells within City limits.
Farming expertise
The key informant also noted that aside from the initial planning, creating the type of diverse and successful farm such as the Four Season Farm model in Maine required a farmer who was knowledgeable and experienced enough to be able to problem solve throughout the season in response to micro weather patterns and other fluctuations. He felt that the biggest limiting factor to the success of such an operation would be finding such farming expertise and reliable farm labour. In addition to the winter market, the informant noted that the Guelph climate and rich soil are conducive to berry production. A berry farm or CSA might be a good enterprise.
5.0 DISCUSSION

The research findings and methods are reflected upon, with respect to their relevance and effectiveness in meeting the study goals of aiding UA farmers and proposing strategies that address barriers to UA, including model urban farm designs for Guelph, Ontario.

5.1 BARRIERS TO ENTREPRENEURIAL URBAN AGRICULTURES

The following discussion looks at the research findings in terms of what they reveal about some of the main barriers to UA identified in the literature review and introduction. This study sheds light on the challenges of profitability, land base accessibility, zoning and development, and regulation in the Guelph context and their relative difficulty for the prospective urban farmer. The proposed model farms are discussed, in terms of their ease of implementation and how they are able to address some of the barriers to UA.

5.1.1 PROFITABILITY

This is probably the most difficult barrier for an urban farmer to overcome. Profitability remains a challenge for the entrepreneurs reviewed in these case studies. These businesses need to excel at all aspects of the business, including production, financial and human resource management, and marketing, because there is little room for inefficiency when profit margins are at or below 2-3%.

The flood of cheap food, such as food dumping from the US or the use of local produce as loss leaders by major supermarket chains, has driven down the price of food in Ontario and farm profit margins to historic lows. The Guelph urban farmer has to charge more for their food and retain more of the end-price dollar in order to meet the higher costs of production and maintain a narrow profit margin. In order to sell their products, this type of enterprise needs to compete on qualities other than price. There is a growing consumer demand for sustainably-grown local products. Although consumers and some restauateurs
are willing to pay more for such products, many people are not willing to pay much more above 10%. There is a segment of the population that is willing to pay the often higher costs of ecologically-grown local food, but it is very small, and this segment requires food of superior freshness, quality and character.

Direct sales allow the farmer to capture more of the end-price dollar by eliminating the middleman of the conventional food distribution system. To do this, most entrepreneurs need to create their own sales channels, distribution systems and client base, which takes a significant amount of the farmer’s resources. One of the businesses investigated in this study, KEG, was expressly created to address this need for an alternative distribution and marketing system that channelled the majority of the retail dollar to the grower. KEG founder, Marc Trealout, has created a mechanism to deliver these services to growers essentially at cost, allowing them to focus on production. The CSA structure used by some of the businesses profiled can be an effective alternative sales channel that leverages the relationship-building attributes of small, local businesses within their community.

5.1.2 LAND BASE

The limited land survey carried out in this study showed that there is significant greenfield land available for urban agriculture applications within Guelph, Ontario. A larger, more comprehensive land survey would likely reveal other excellent sites for urban agriculture.

Meetings with representatives of companies with such properties revealed that there are organizations within Guelph that are receptive to such enterprises. Discussions with McNeil Consumer Healthcare showed that ecologically-sound local enterprises could form synergistic relationships with companies such as McNeil through mutually beneficial publicity, procurement agreements, rental agreements and land management services and lower taxation costs for the property owner. In terms of procurement agreements, organizations
such as McNeil, as well as Homewood Health Centre, operate large cafeterias for their staff and clients, which could be a potential distribution channel for an on-site production facility.

The details of potential lease agreements would likely be highly individual, geared to the specific needs of the farmer and land owner. The Ignatius Jesuit Centre, on the other hand, already leases high quality arable land for agriculture at a yearly rate of $50/acre. The land available for UA, on properties such as McNeil and Homewood, is generally being maintained as lawn and has multiple functions, including as a buffer from adjacent neighbours, an amenity for clients and employees and as a public statement.

Leasing costs would likely be affordable for an urban farmer. Rental fees are not the major motivators for leasing to farmers for companies such as McNeil and Homewood. Positive publicity would be one of the main reasons for a company such as McNeil to have UA enterprises on their land. Thus, urban farms will likely need to pay extra attention to how the farm is perceived in terms of its aesthetic appeal and how it benefits the community and environment. The farmer might consider including education and recreation services as one of their products. Overall, land cost and soil contamination do not seem to be the biggest barriers for potential urban farmers. Likely, the main issues around land would be access, liability, public relations and input costs. Liability would affect leasing arrangements for companies such as McNeil, in terms of taking on the responsibilities of becoming a landlord to a UA tenant on their land. These land owners would likely be interested in long-term, 5-10 year, lease agreements where the farmer invests in the soil and land.

The urban environment requires special consideration of input expenses, such as the higher financial and environmental cost of using municipally-treated water and soil inputs. Organizations, such as Growing Power in Milwaukee, have addressed their soil fertility needs by capitalizing on the plentiful urban nutrient waste to create high quality compost for their soil amendments. Buildings create opportunities for water harvesting of relatively clean
rainwater from rooftops that can be used to water crops and potentially reduce the load on municipal stormwater infrastructure. Such systems usually require careful engineering and exploration that may be cost prohibitive.

5.1.3 ZONING AND DEVELOPMENT POLICY

Guelph is fortunate to have an organized effort by stakeholders, such as the Guelph-Wellington Food Round Table, formed in 2011, that is informing municipal policy and strategy for UA and helping create an enabling climate for UA in the City. Residentially zoned land might not be amenable to certain types of production, such as commercial greenhouses, because of nuisance and by-law issues. Industrial and agriculturally zoned greenfield land, within the City or on the fringe, is likely a less restrictive environment for UA operations.

5.1.4 REGULATION

Market gardening has been chosen as the UA enterprise for the model urban farms partly because it faces the least regulatory barriers. Production systems involving livestock or supply-managed products will likely be difficult to implement in a profitable way because the current regulatory climate is not calibrated for small-scale producers. That being said, the urban climate presents some unique opportunities for by-passing restrictions on marketing supply-managed products such as eggs. Currently, farmers can avoid marketing their eggs through the supply-managed streams only by selling from their farm-stand. The urban context can potentially make the farm-stand a relatively convenient and profitable distribution channel.

5.1.5 MODEL FARM DESIGN IMPLEMENTATION

The proposed model farms are relatively straight forward to implement in terms of securing land and finding a market for their products. There is currently a market gap in sustainably-grown, local winter greens and root vegetables. Guelph has some established direct market sales channels, such as the weekly Farmer’s Market. There are independently-
owned small grocers that work with local enterprises and feature their products, such as MarketFresh and the Stone Store.

The most challenging aspects of implementing the model farms will likely be achieving consistent, efficient and quality production levels necessary to remain profitable. This type of enterprise requires skilled and experienced farmers. The urban environment is also an opportunity to engage new Canadians, who have agronomic knowledge and experience, in production for specific ethnic groups and the general market. The McVean Start-Up Farm in Brampton is an example of this (Farmstart, 2013).

Finding the start-up capital for such an enterprise might also be a challenge. There are organizations, such as the Metcalfe Foundation, Ontario Centre for Excellence and Farmstart, that might offer financing for such a venture. The relatively low final take-home salary for the farmer will make it difficult to justify the risk, responsibility and investment of starting such a business.

Based on this study, some basic recommendations for UA farmers would be to bring together expertise in production and business that would enable the creation and ongoing adaptation of both a business and agronomic plan. Profit expectations need to be realistic, and the farmer may want to choose a not-for-profit business structure in order to access grant funding.

5.2 REFLECTION ON THE RESEARCH PROCESS

The case study interviews were an effective way to assimilate information and view the issues from the individual’s perspective in a relatively short time. It would have been useful to investigate the operations of some local winter greens producers, such as Whole Circle Farms, a privately-owned organic and biodynamic farm that is producing consistent and high quality vegetables for its CSA members and restaurants throughout the year.
The land survey efforts were successful when the researcher was connected with a representative of the organization through a third party. The direct, cold-call type of approach used to request interviews by e-mailing letters of introduction and following up with phone calls did not result in meetings or any connections of value.

Interviews with key informants were helpful in getting a sense of the industry and the local perspective. A particularly helpful key informant interview was the critique of the model farm designs. It would have been useful to have other key informants review the model farm proposals, with respect to their area of expertise.
6.0 CONCLUSION

This chapter presents the limitations of the study methods and scope. In addition, the relevance of this research to practicing landscape architects is summarised and recommendations for future study are proposed.

6.1 LIMITATIONS

This study has several limitations. The literature review focuses on certain aspects of UA but excludes other areas such as business management and market research that were beyond the scope of this study. It would have been helpful to include a more detailed exploration of UA examples in other developed countries, such as the Netherlands. The case studies were confined to an hour interview and publicly available information. Each business could be studied in much greater depth. This study was limited to interviews with the owner/founder of each company, which can introduce a biased perspective. It would have been useful to interview a range of stakeholders within each organization, including employees and clients. More detailed financial information about each company would have been helpful. This study would have benefited from including additional businesses for case study, particularly ones in Southern Ontario that are producing for the Winter market, such as Whole Circle Farm in Rockwood, Ontario and other new UA enterprises such as Backyard Bounty.

The land survey could have been much more comprehensive and included the entire City of Guelph. There are other lands in the Guelph area, including provincial land such as the former Guelph Correctional Centre, that might be appropriate for UA (Currie, 2013). An exploration of leasing arrangements on municipal lands would be helpful. Exploration of issues around soil contamination and remediation strategies and technological solutions, such as green roof farms, were beyond the scope of this study.
Key informant interviews were limited to certain segments of the industry, and could include a much broader sampling. The model farm designs were taken to a conceptual level and could be developed much further. It would be informative to have the farm designs critiqued by more than one key informant, and to incorporate that feedback into the designs. In addition it would be helpful to develop specific business plans for each proposed farm that would include a profit forecast and analysis.

6.2 ADVICE FOR LANDSCAPE ARCHITECTS

Landscape architects have an important role to play in the evolution of UA, especially in the Southern Ontario context. There is a need for complex and visionary design that integrates the multiple functions that UA sites can provide. In addition to food production, UA farms in developed countries often have educational and recreational components. These sites need to be ecologically integrated into the environment, with consideration of aspects such as stormwater recharge and potential capture, pollinator habitat and microclimate amelioration. UA has an important role in shaping the City’s identity through the landscape, thus UA sites need to have a high aesthetic value. This is a challenge for landscape architects, because it requires a deep understanding of various fields. Perhaps, when working on such projects, landscape architects would be well served to use a multi-disciplinary approach and include experts in agriculture, ecology and education on the team.

6.3 FUTURE STUDY

The multiple dimensions of UA, and how they can be integrated into a particular site context, would be interesting explorations for future study. The potential for clustering of UA and related enterprises into food and agriculture districts within the urban matrix can be investigated. These suggestions derive from a need to stack the uses and functions of land within cities, a limited resource with conflicting user pressures within cities.

6.4 SUMMARY
The development of a strong UA sector can significantly benefit the economy, food security and social fabric of a municipality. This study aimed to propose strategies for urban farmers that addressed some of the major barriers to UA in Guelph, Ontario. A literature review identified some of the important social, economic and environmental benefits of UA, as well as the major barriers to its implementation in Southern Ontario. The main barriers discussed were profitability, access to land, zoning and development policy and regulation. Using the combined methods of case studies, a land survey, and interviews with key informants, the challenges to UA and effective solutions were explored. The analysis revealed that one of the biggest ongoing difficulties for a UA enterprise is likely to be profitability. This is mostly due to the current climate of cheap food that has resulted in precariously low profit margins for many farmers. This investigation showed that there is a substantial greenfield landbase available within and on the fringe of the City of Guelph for UA. Zoning challenges did not seem to be a major impediment, because there was a variety of land available, allowing a farmer to choose the most appropriately zoned sites and avoid some of the potential nuisance and by-law issues involved with UA on residential land. Two model urban farm designs were proposed, which focused on winter market garden production. High value winter production, such as greens, was chosen because there is currently a market gap and because it avoided some of the regulatory hurdles involved with livestock enterprises or supply-managed products. A key informant design critique of the model urban farms highlighted important design considerations, including microclimate amelioration, and production challenges, especially the agricultural skill and experience needed to run an urban farm efficiently.
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Appendix 1: Categories for sorting case study interview answers

a. Distribution
b. Sales channels/marketing
c. Employees/labour force
d. Business structure/model
e. Landbase
f. Farm location
g. Years in operation
h. Volume/scale
i. Product/services
j. Background/motivation
k. Challenges
l. Lessons
m. Future plans
n. Advantages
o. Success strategies
p. Areas for growth/market opportunities
q. Vision
r. Alternative models
s. UA application/advice
Appendix 2: Potential case study interview questions

The following are the types of questions I would like to ask:

1. Marketing and distribution have been identified as some of the biggest barriers to profitability of small producers, how have you approached these challenges in your business?
2. What distribution channels would you like to see developed?
3. What types of marketing approaches would you like to see explored?
4. What do you think are the biggest obstacles to profitability?
5. What do you think it takes to become a profitable small producer in Ontario?
6. How would you characterize your business strategy?
7. How would you characterize your original business plan and has it changed over time?
8. How long did it take to develop your business? Would you like to see your business continue to evolve?
9. In your opinion, what are reasonable profit expectations for small scale producers?
10. What would a theoretical business budget look like for a start-up initially and in 5-10 years?
11. What business structures do you think have the most potential for success?
12. What do you think of long-term lease agreements for farmers?
13. What types of start-up costs are associated with your type of business?
14. What are your recommendations for limiting operating costs and maintaining efficient production?
15. What are your thoughts on the size of an operation and profitability?
16. Which agricultural enterprises do you think have the potential to be profitable on a 1-20 acre land base?

Thank you for your time and consideration.
I can be reached by e-mail or cell phone.

Sincerely,

Masha Kazakevich,
Master of Landscape Architecture Candidate,
School of Environmental Design and Rural Development,
University of Guelph
Guelph, Ontario, Canada
http://www.uoguelph.ca/sedrd/
Appendix 3: Letter of introduction to companies with a potential landbase for UA

Masha Kazakevich,
Master of Landscape Architecture Candidate,
School of Environmental Design and Rural Development,
University of Guelph
Guelph, Ontario, Canada
http://www.uoguelph.ca/sedrd/

Linda Hasenfratz,
President
Linamar Corporation
287 Speedvale Avenue West
Guelph, ON
N1H 1C5
Phone: (519) 836-7550

March 23, 2010

Attention: Linda Hasenfratz,
Linamar Corporation, Guelph

Re: UA research

Dear Linda Hasenfratz:

I am researching UA as part of my Master’s Thesis in Landscape Architecture at the University of Guelph, Ontario, Canada.

One of the research questions is how does Linamar regard the possibility of having some of the Guelph location land that is currently lawn, maintained as an aesthetic and ecologically integrated market garden. The benefits to Linamar of such an arrangement would be reduced property taxes and maintenance costs, additional rental income and community food security and quality enhancement.

Would it be possible to meet with a Linamar representative about this research for a 15-30 minute interview?

Thank you for your time and consideration!

Sincerely,
Masha Kazakevich

Professor Karen Landman,
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