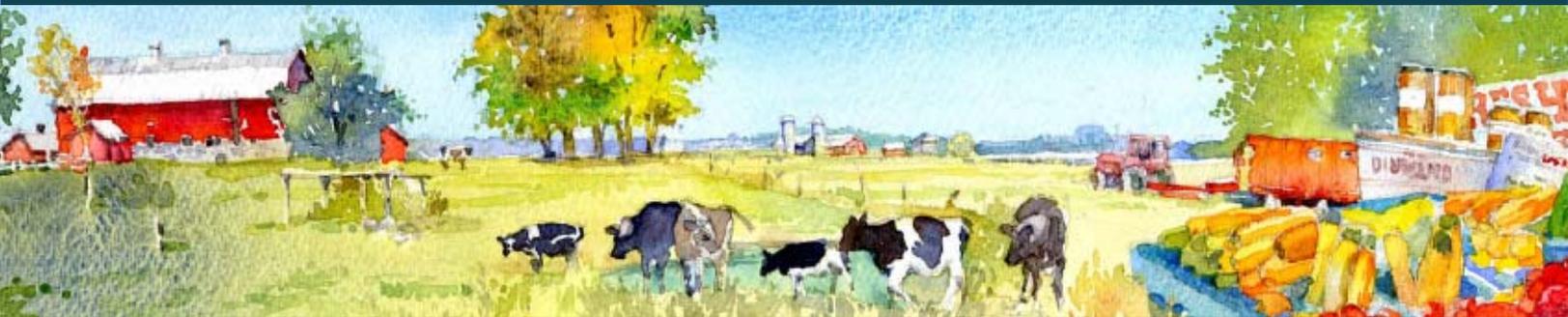




NATIONAL CAPITAL COMMISSION
COMMISSION DE LA CAPITALE NATIONALE



NCC's Sustainable Agriculture And Food Strategy

CULTIVATING CANADA'S CAPITAL
2017

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Note

The initiative arose from the Greenbelt 6 years ago and was transferred to Real Estate Management in 2014, which is responsible for managing the lands of the Agricultural Portfolio. The majority of NCC agricultural lands are located within the Greenbelt, and the majority of studies and reports regarding agriculture at the NCC were done in conjunction with this portfolio. However, recent agricultural initiatives on other lands motivated a first attempt to broaden its application to other NCC portfolios, as with Urban Lands and Gatineau Park, which also features opportunities for agricultural activities for the benefit of Canadian communities.

Executive Summary

The United Nations estimates that by the year 2050, the global population will grow by 2.3 billion people, to 9.7 billion. Second, two-thirds of these people will live in cities. As the world's urban areas grow, the amount of land available for raising crops to feed all those people is diminishing.

It's encouraging that more and more urban cities and capitals of the world are showing the foresight to support and integrate a diverse and sustainable food supply into their planning processes. They're finding ways to protect farmland and encourage food production at the local and regional level, as key elements of maintaining vibrant and sustainable communities. Every city and region tackling the challenge of long-term food security has its own reality and its own approach, but there are common ideas emerging to meet the common concern.

The National Capital Region (NCR) is part of this trend. We are blessed here with a wide range of resources and producers all sharing this goal. The National Capital Commission (NCC) is one contributor to this effort, alongside agricultural producers, non-profit organizations and different level of governments.

The role we have to play is significant. The unique combination of high quality resources in the Greenbelt and its location at the doorstep of the Capital City makes production for the local market and synergy with local communities a natural fit. As a major landowner and manager of public lands in the NCR, the NCC is contributing by protecting and providing productive lands and infrastructure to facilitate the establishment of farmers, whom in turn produce food that contributes to the sustainability and resiliency of the NCR.

The NCC's Greenbelt Master Plan encourages sustainable, diversified agriculture, and support for the farmers to work the land. The Plan for Canada's Capital, which we are in the process of finalizing, builds on the unique position of protected farmlands near the center of a large urban region. It will see the Greenbelt remain protected against the increasing urban development, it will showcase its natural and built heritage and it will increase its relevance to the community and the region as it builds environmental and food resilience. It will see the NCC emerge as a cutting-edge leader in urban agriculture, fostering sustainable, diversified, and viable food production practices, while celebrating Canada's living agricultural legacy with its rich agricultural and rural history and built heritage. It will represent/reflect the rural and agricultural communities of the country and be a model of urban planning and best management practices.

The Sustainable Agriculture and Food Strategy aligns with and augments this vision. It translates its principles into tangible and achievable results. We invite you to read more in the following pages.

**Gary Lacey, Executive Director,
Capital Stewardship**

1. Context

1.1. Relevance and Challenges

Relevance/Significance of Agriculture at the National and Regional Levels

Many major cities and Capitals of the world recognize the relevance of agriculture. They protect and integrate farmlands and food production into the network of services, resources and activities offered by green spaces within and in the periphery of their core (Appendix 1). Among others, one can think of England's Greenbelt in London, the international Milan Urban Food Policy Pact which was signed in 2015 by hundreds of major cities in the world, the Cuyahoga National Park in the United States, the federal Rouge Park in Toronto, the Vancouver Food Strategy, the farmland trusts in Victoria, BC, the Food and urban Agriculture Strategy in Edmonton, etc..

Ottawa is not just a city, it is a Capital City. As such, this is a model for its citizens as well as a reflection of the country. The NCC's Morrie report (1991) entitled '*The Future Greenbelt: Agricultural Analysis*', identifies the national and regional interest of agricultural lands and activities for Canada's Capital:

a) National level

- National interest is reflected in the **symbolic importance of the sustainability of the Canadian urban environment and its hinterland**;
- **Feeding the Capital has a regional function, although its symbolic importance in terms of urban sustainability might be of interest**;
- **Environmentally sustainable agriculture is the focus of increasing global attention.** Policies and strategies at various levels of government reflect growing awareness among Canadians of agricultural and environmental concerns and the need for sustainable approaches;
- National interest is reflected in the **importance of agriculture as a building block of Canada** and its **continuing contributions to the national economy**. Rural heritage is recognized as a distinct element of the landscape in the NCR and various stages of Canadian settlement are reflected by buildings with historical values;
- From a contemporary lifestyle perspective, it recognizes that while most Canadians live in or near urban centers, **appreciation of the rural landscape and the products it produces** for urban Canadians deserves to play a more integral role in the Canadian experience.
- The conversion of agricultural lands to non-agricultural uses is proceeding at a rapid rate and **the need to protect quality agricultural lands are issues of national, regional and local importance**. The demand on agricultural land for non-agricultural uses reflects the pressure on the urban fringe of many major cities in the country. Of Canada's expansive land mass, only a limited portion can support agriculture production and its conversion to non-agricultural uses is proceeding at a rapid rate
- It also recognizes the need for understanding and appreciating the workings of the agricultural landscapes that dominate the hinterland of most Canadian cities by urban Canadians. The integration of urban fringe agricultural lands with the recreation and

leisure needs of the urbanites is an opportunity to **sensitize urban populations to the vital contributions that rural areas make to cities.**

b) Regional level

- Regional interest is expressed through a commitment to the **stewardship of a regional resource base. This is important because of its quality and proximity to the urban areas**, the growth and security of the agri-food sector, and security of food supply as city self-sufficiency increases;
- Feeding the urban area, **enhance the capital's self-sufficiency in food production and security of food supply.**
- **Preservation of the rural regional agricultural landscape and maintain a vital and appealing agricultural landscape;**
- Is expressed through **encouraging the growth and security of the regional agri-food industry**, particularly as urban markets develop;
- Reflect new techniques in recognition of a **perceived need for the capital to display leadership;**
- **Sustainability of local production** in an environmentally sound manner and the integration of local recreation and other pursuits contribute to the **green image of the region;**
- Is manifested through the **maintenance of a viable local farming community;**
- Is manifested through **recognition and respect for the differing perceptions and values** that shape the rural landscape.

Major Trends in Population Growth and Urbanization

The population is growing, food need is increasing, and in parallel the land and soil resource on which we rely to produce food is under increased pressure from competing use as urbanization.

The United Nations estimates that by the year 2050, the global population will grow from 7.3 billion people, to 9.7 billion (United Nations, 2015). By that time, two-thirds of those people will live in cities (United Nations, 2014). Decades ago, the majority of the people were living in rural areas. Currently, half of the population lives in cities (United Nations, 2014).

As the world's urban areas grow, the amount of land available for raising crops, for feeding all those people, is diminishing. In Canada, between 1971 and 2001, urbanization consumed about 15,200 square kilometres (1,520,000 ha) of surrounding land, which is equivalent to almost three times the size of Prince Edward Island (Statistics Canada, 2005). About half of this area was prime farmland between soil class 1 to 3 (Hoffman, 2005).

This can also be observed here in the National Capital Region (NCR) as the urban area of the City of Ottawa and Gatineau has been expanding onto surrounding prime farmlands (Figure 1). Between 1971 and 2011 in the NCR, about 85,800 ha of arable lands were lost to settlements and roads (Statistics Canada, 2016), which is equivalent to more than 4 times the total land area of the Greenbelt.

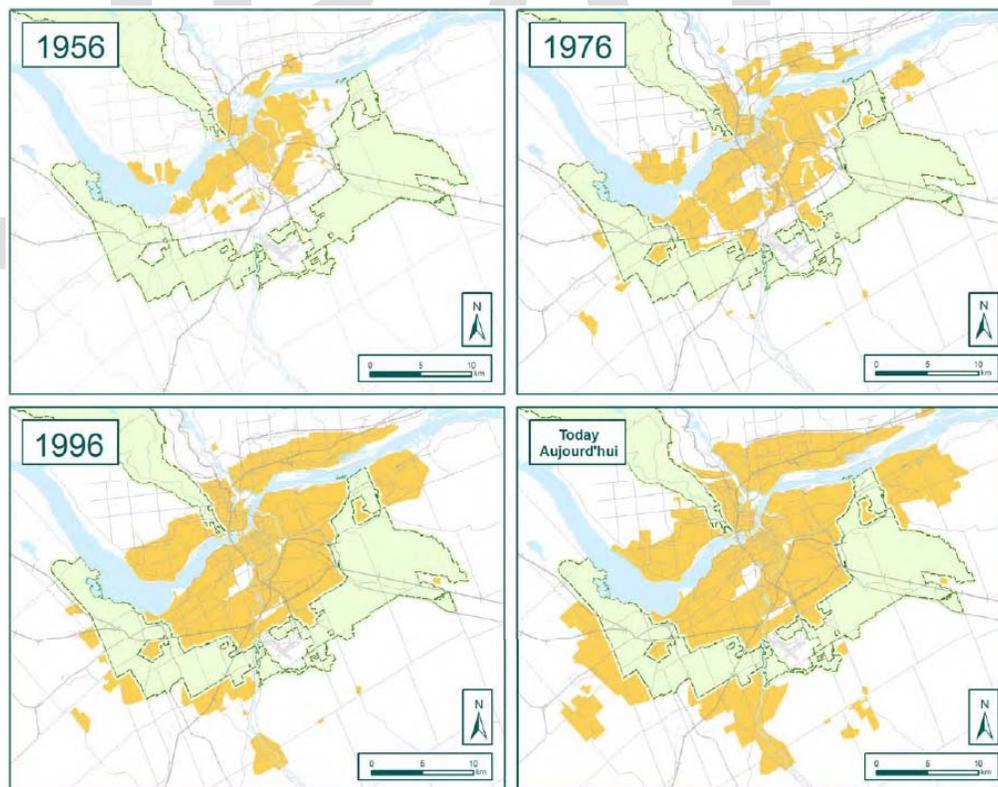


Figure 1: Expansion of urban area of the City of Ottawa and Gatineau from 1956 to 2011-2012 (Source: NCC)

Note: “While Canada’s built-up area represented only 0.1% of the country’s total area in 2011, urban expansion results in the loss of prime agricultural land because numerous communities across the country were originally established on fertile agricultural land. The expansion and intensification of built-up area also results in the loss of green space and natural land covers. These changes are normally permanent—once agricultural or natural land is used for urban purposes, it is unlikely to return to a natural state.” (Statistics Canada, 2016)

A Limited Non-Renewable Resource

It may take hundreds to thousands years to produce an inch of topsoil and it is considered non-renewable as it cannot be renewed within a human lifespan (FAO, 2015). Despite Canada's size, total agricultural land represents 7% of Canada's total landmass (AAFC, 2016) (Figure 2). Prime agricultural lands, which is defined as soil of higher quality for agricultural production between class 1 to 3, represents 5% of Canada's total land area (Statistics Canada, 1982) and is mainly found on the Prairies, Southern Ontario and Québec.

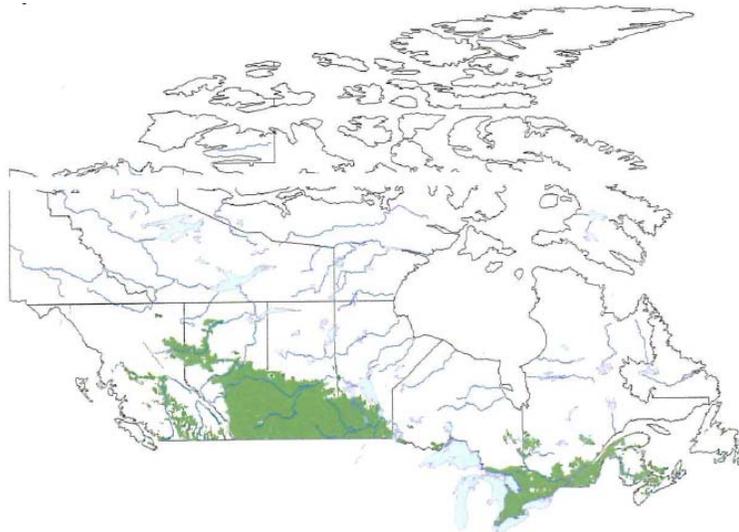
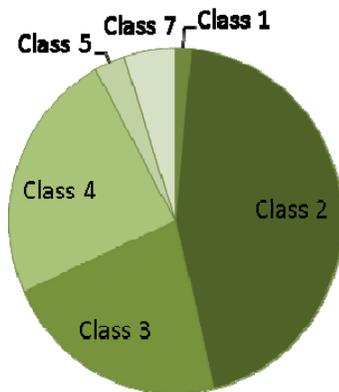


Figure 2: Spatial extent of Canadian agricultural activity (Source: AAFC 2016)

The National Capital Region is located in one of those rich agricultural hotspots of the country, where a diversity of high quality soils adapted to a wide variety of crops is found. For example, approximately forty different kinds of soils can be found in the agricultural sector of the Greenbelt. The predominant soil types are Brandon, Ste. Rosalie, Allendale, Carlsbad, Bearbrook, and Mountain. The majority of soils in the Greenbelt are of Class 2 (45%) (Figure 3), which is of high value for growing crops. The NCR is also privileged with soil class 1, the highest quality soil, which is a rare resource in Canada but can be found mainly in the west of the Greenbelt.



Note:
Canada soil classes 1 to 4 are considered soils with good to excellent agricultural potential, while soils classified 5 through 7 have progressively greater limitations. Most of the Class 7 soils are associated with creek banks, slopes, and some very small pockets of organic soils.

Figure 3: Soil Class Proportion in the Greenbelt

Portrait of the Agricultural Sector at the Country Level

In Canada, 97% of the farms are family owned and operated. The number of people fed by one farmer has been increasing, as the number of farms has been declining and the size of farms has been increasing (Farm and Food Care, 2015). Canada is among the world leaders in food safety and quality (Le Vallée, 2014) and the second leader in sustainability. A variety of farm commodities are produced throughout the country (Figure 4).



Figure 4: Top commodities by province and territory (Source: AAFC 2013)

Agri-food is one of Canada's largest economic sectors: one in eight jobs is powered by the agriculture and agri-food sector employing 2.2 million Canadians (AAFC, 2013). We are the world's fifth largest agricultural exporter and the sixth largest importer (AAFC, 2016). We are producing about 80 per cent of the world's maple syrup and we're the world's largest grower and exporter of flax seed, canola, pulses (like peas, beans and lentils) and durum wheat (used to make pasta) (AAFC, 2013). We import fresh and processed fruits and vegetables, which accounted for nearly 30% of the total value of Canadian agriculture and agri-food products imported in 2014 (AAFC, 2016). Agriculture and agri-food industry contributes \$100 billion annually to the country's gross domestic product (GDP) (AAFC, 2013).

In the Face of Disturbance, is Our Food System Resilient?

In the event of natural, economic, or political disturbance, on what food resource will we rely? The dynamic forces of weather (climate change, frost, drought, etc.), the value of our dollar, the cost of oil, politics, trade, supply and demand, etc. all affect the price of our food.



A recent example to illustrate this point is the compounded effect of California's recent droughts and Canada's plummeting dollar, which have contributed to higher food prices in Canada. In Ottawa, Cauliflower prices reached 8\$/head in the winter of 2015, which is far from the usual 2\$/head consumers are accustomed to (CBC, 2015). California is the primary source of Canada's imported fruits and vegetables, including: "84 percent of its broccoli and cauliflower, 76 percent of its fresh strawberries, 68 percent of its lettuce, 89 percent of its almonds, and 69 percent of its carrots, turnips and other root vegetables from this state" (CBC, 2015). Cauliflower is mainly imported but this is a cool-weather crop that is produced here in our colder climate.

Changes in the political scene, trade agreements and farmland ownership can also cause uncertainty regarding our food supply. "The United States is the source of more than half (57%) of imported food, and similarly 55% of domestic food exports from Canada are directed to the United States." (Statistic Canada, 2015). Farmland ownership by foreign investors, banking institutions or pension funds has also sparked much debate lately. Trade agreements are important building blocks of our economy and food supply, as well as land ownership.

According to Patricia Ballamingie, professor in Environmental Studies and Human Geography at the University of Carleton in Ottawa, "the solution is diversity — of sources, of growing methods, and of scale. We will always rely on food produced elsewhere, but can increase our local production to reduce our reliance on imported food and strengthen our local food economy and security. As an example, there are regional and Ontario producers of root crops, but they simply don't produce on a scale that could supply the demand. In part this is due to price: in order to make a living producing significant quantities of root crops, the wholesale price has to be high enough to make it possible. And with the current large volumes of cheap, imported root crops, that wholesale price simply doesn't encourage enough regional root crop production. Also, the demand is 12-months-a-year, and the southern states can meet that demand for most months, whereas Ontario production is limited to given months every year. But we do have the potential to rebuild some of our lost infrastructure for food preservation and storage as we grow food more locally. We also have the viable farmland to grow more food for direct sale to people in the region. Right now, the land is devoted mostly to growing corn and soy —used locally for animal feed or exported for processed foods." (Ottawa Magazine, 2016)

1.2. The NCC lands and the National Capital Region

Building on the Unique Position of Protected Farmlands Near a Large Urban Centre

The NCC, which has a mandate to assist in the development, conservation and improvement of federal lands in Canada's Capital Region, plays a significant role in planning the region through land ownership and preparation of plans and policies for federal property. As the largest landowner and caretaker of public lands in the NCR, it is uniquely positioned to contribute to the food system through the protection of the prime agricultural lands it manages. It also contributes by making accessible many fully functional farm units at the doorstep of the Capital City, and by facilitating the establishment of farmers, whom in turn, contribute to the regional food supply. By doing so, the NCC enriches the sustainability and resiliency of the National Capital. We are privileged in the NCR with a wide range of resources and producers all sharing this goal. The NCC is one contributor to this effort, alongside the municipalities, the urban and rural communities, the distributors, the retailers, NGOs, etc. that are forming this dynamic sector.

The National Capital Region

The NCR, as described in the National Capital Act (R.S.C., 1985, c. N-4), is a territory that occupies Ontario and Quebec and includes the City of Ottawa, the City of Gatineau and 7 municipalities regrouped under the MRC-des-Collines (i.e. Cantley, Chelsea, Pontiac, L'Ange-Gardien, La Pêche, Notre-Dame-de-la-Salette, Val-des-Monts) and part of Russell, Beckwith and Mississippi Mills. The NCR forms the seat of the federal government and with its 1.3 million in population, represents the fifth largest metropolitan area in Canada (CMA, Statistics Canada, 2016). In total, the NCR covers approximately 471 000 ha. The federal lands owned and managed by the NCC, which comprises the Greenbelt, Gatineau Park and Urban Lands, represents a total of approximately 53 700 ha within this area which covers 10% of the NCR and 20% of the Capital's core (Figure 5).

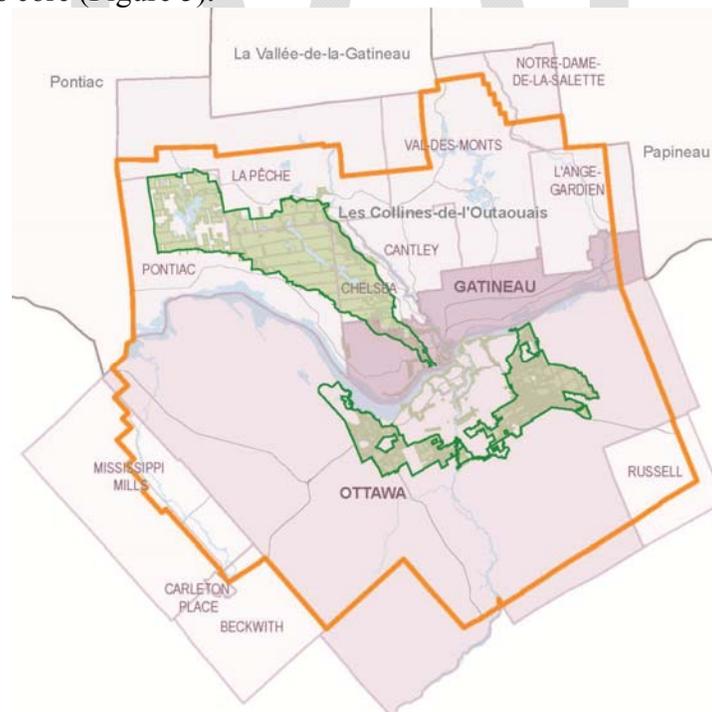


Figure 5 : The National Capital Region (orange border), its municipalities (purple) and the lands managed by the NCC (green) (Source: NCC)

Regional and Local Food Definition and Radius

What is local and regional? The definition varies and can be seen at different levels with products sourced at the global, national, provincial, regional, municipal and local scale. All regions and cities are unique and different in terms of size, needs, culture, design, etc. but they all have in common the resurgence of the local food movement, which can be defined as a "collaborative effort to build more locally based, self-reliant food economies, one in which sustainable food production, processing, distribution and consumption is integrated to enhance the economic, environmental and social health of a particular place" (Feenstra, 2002).

Among the movement, there is the "locavores" concept defined as those who prefer to eat locally grown food produced within a certain radius. The criteria for that distance are subjective to the individual, but the locavore movement encourages consumers to buy from farmer's markets and places closer to their home. While each locavore can create their own definition of local, many draw inspiration from established guidelines such as the 100-mile diet, which encourages sourcing food products within a 161 km radius.

There is also the foodshed concept, similar to the watershed concept from which the term was originally derived. It generally refers to a geographic area and its capacity to produce food to meet local food needs. For example, that capacity in New York is being explored at Columbia University, from the country-level perspective with a National Integrated Regional Foodshed Model, to the state and regional-level perspective (see Figure 6, Conard, 2016). This initiative is part of a larger project regrouping academics and government from 12 states, to explore how a full diet can be produced or processed in the Northeast states region with current and potential agricultural production (Enhancing Food Security in the Northeast, 2016).

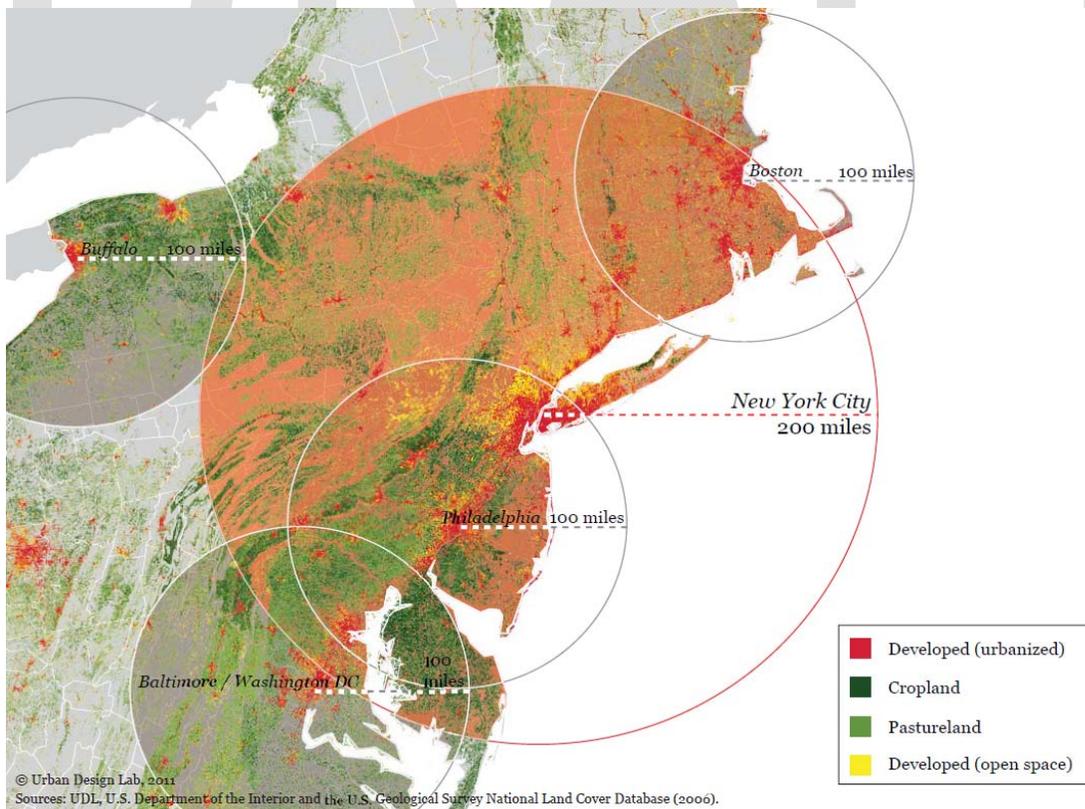


Figure 6: New York City's Metropolitan Food Region (Source: Conard, 2016)

The Amount of Farmland Required to Feed Urban Areas

The amount of farmland required by urban and rural regions to sustainably feed themselves is being assessed by many major region and cities. For New York, the most populous city in the United States, academics suggest going beyond the city limits with a 200 mile (322 km) radius around the urban core, and a 100 mile (161 km) radius around smaller peripheral cities such as Boston, Philadelphia, Buffalo, etc. (Figure 4). For Paris, the capital city of France, it is suggested that the city's food should extend to a radius of at least 200 to 300 km (Bernard, 2012).

For the Ottawa-Gatineau and greater region, with a population of 1.3 million (census metropolitan area, Statistics Canada, 2016), and a NCR which extends to a radius of 50 km around the urban core (Figure 7), do we have the capacity to answer urban and rural food needs within the National Capital Foodshed? This is still to be determined. The lands managed by the NCC, i.e. the Greenbelt and Urban Lands, are contained within a radius of 20 km to the urban core, while Gatineau Park is contained within a radius of 50 km (Figure 4). How much food comes from the farmlands located outside of the NCR? What is the Capital City Region food dynamic?

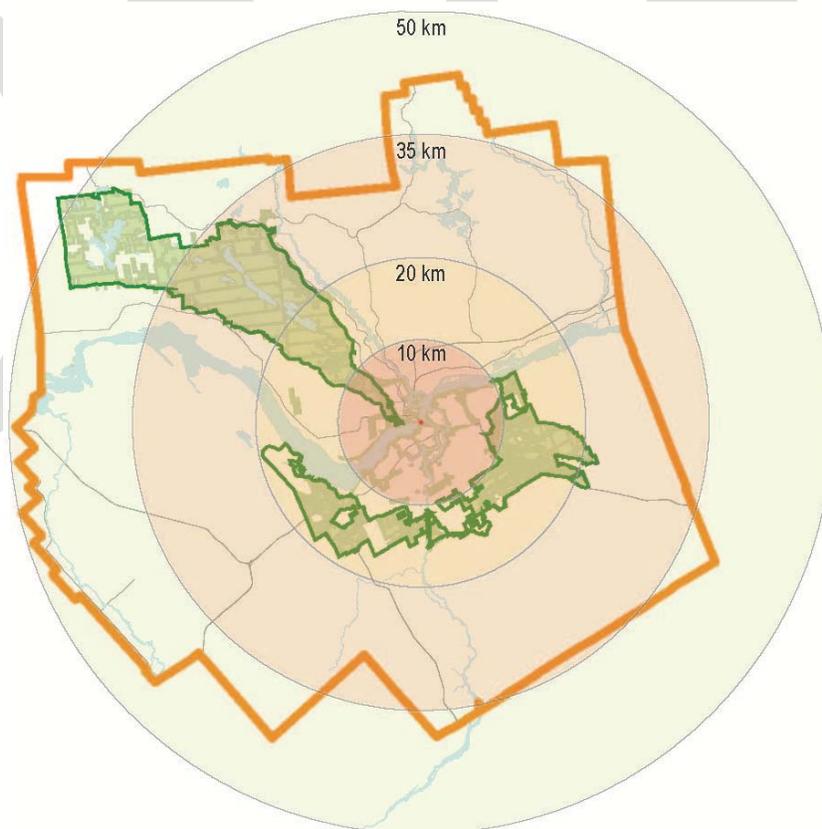


Figure 7 : The NCR's foodshed radius to the urban core and the NCC lands (Source: NCC)

Local non-profit organisations like Just Food and the Table agroalimentaire de l'Outaouais are covering a radius of approximately 150 km to the urban core in the Greater Ottawa and Gatineau region to share with the consumers the locations where local food products can be sourced (i.e. online interactive maps: Ottawa Buy local Grow Local Food Guide, Parcours Outaouais Gourmet and local freshness/fraicheur locale).

What is Sustainable Agriculture?

Numerous definitions both short and long have been offered by experts in the field. These definitions ultimately coalesce around central notions of respect for the natural environment and its preservation for future generations; people; and the recognition that economics must play a role. Questions of social and economic equity and opportunity are also at the very heart of sustainable agriculture.

As seen previously, it has to do with having access to a diversified and fresh food source, the capacity of the territory and regional farms to answer those needs, the agricultural resources conservation, etc.. It also has to do with farming practices. From conventional to organic farming, a variety of practices can be found on the sustainable agriculture continuum (Table 1). A variety of crop and animal enterprises and farm practices, such as crop rotations, cover crops and rotational grazing systems, all express diversity. “Farmers are proving that natural, organic, local, and other approaches to sustainable agriculture can produce high-quality food while addressing the ecological challenges of the twenty-first century” (John Ikerd).

Table 1: Examples of practices on the sustainable agriculture continuum

Less sustainable	Better	More sustainable
Continuous annual crops No winter soil cover	Crop rotations several crops	Longer rotations of multiple crops including forages
Annual tillage	Reduced tillage	No-till, zone tillage
Open ditches	Grassed waterways	Drainage control system
Large open fields	Hedgerows	Strategically placed windbreaks
No environmental planning	Limited planning	Environmental farm with a nutrient management plan
Full range of chemical treatments for pests	Integrated pest management – reduced chemical inputs	Organic
Intensive confined livestock Housing	Pastured livestock	Rotational grazing, Certified humane rearing
No food safety plan	Partial implementation	Certified on-farm food safety plan
No business plan	Partial planning	Complete business plan for profit
		Precision agriculture

The demand for organically produced food continues to grow in Canada. While fruits and vegetable compose the bulk of the demand (41%), followed by breads and grains (14%) and dairy (10%), the demand for organic meats, snacks, and convenience foods is poised for substantial growth. While the overall percentage of organic food purchased in Canada remains low - less than 2% of consumer food expenditures - annual percentage growth in this market segment is still in the double digits; five to six times the growth rate of the conventional food market segment. There also appears to be a growing trend for ‘almost’ organic locally grown food which provides consumers added confidence in the source of their food while not being as restrictive to the producer as certified organic production. Farmers serving this segment, often through direct sales at farm gate or through farmers’ markets, tend to keep non-organic inputs such as pesticides and veterinary treatments to a minimum. Many Greenbelt farmers, whom are not organic producers, are minimizing the use of pesticides by using Integrated Pest Management practices for example. The NCC encourages organic agriculture throughout the Greenbelt and five farms are currently certified organic, with as many more in the process of obtaining their certification.

Precision agriculture, which uses satellite imagery and Geographic Information Systems (GIS) for agricultural applications on the field, also increases sustainability by minimizing required inputs and maximizing yield/productivity. For example, the tractors on the field are now equipped with a Global Positioning System (GPS) and connected to a satellite to know their exact location and deliver the precise amount of fertilizer and pesticide required at the exact location needed (Figure 8). These processes also allow the farmer to calculate and log the yield as the combine is harvesting to see any spatial variation in yield at the field level for upcoming improvements. This is important for farmers facing rising prices for crop inputs (fertilizer, pesticide, etc.) and enables a higher level of sustainability. This technology is mainly associated with types of agricultural production that are at a larger scale, such as field crops, and many of our field crop farmers are already using it. The literature identifies this technology as one of the keys that will help feed 9 billion people by 2050.



Figure 8: Crop health assessment using in-season aerial field Imaging. Source : Farmers Edge

1.3. Food produced and consumed in the National Capital Region

Portrait of NCC lands

Food production on NCC lands occurs mainly in the Greenbelt where 28% of the territory is designated for an agricultural purpose as per the Greenbelt Master Plan (2013). This corresponds with nearly 6,000 ha of high quality farmlands, 65 farmhouses, 80 historical barns, machine sheds and tile drainage infrastructure, which are parts of fully functional farms leased to agricultural producers. The farms arose mainly from European settlement in the 19th century and have been transferred through generations, within the same family or to a new generation of farmers. As such, the majority of NCC's farms are family-owned, some of which are well established within their community for generations, like La Ferme d'Orléans and its centenary orchards on St-Joseph. There are also community farms offering training, workshop, and start-up farm programs, like the non-profit organization Just Food whose headquarters are located in the Greenbelt.



Apples harvested at the centenary orchard located at 101 Herzberg, Greenbelt, On (Source: NCC)

In the Greenbelt, farm production types are currently dominated by field crops with nearly 60% of the total agricultural area. This reflects the main type of crop grown in Ontario and Quebec. Other crop types found in the Greenbelt are as follows: livestock at 14%, mixed farms at 9%, fruit and vegetable at 7% (including an incubator farm and community gardens), equestrian at 6% and ornamental and fallow farmlands with less than 4% of the farm area. A variety of products are being grown and made accessible to the public directly at the farmgate through farmstands scattered throughout the Greenbelt, pick-your-own (PYO) activities, local farmers' markets and the Community Supported Agriculture program. Innovative initiatives such as community gardens or PYO gardens are being run and established by agricultural tenants on NCC farms.

On Urban Lands, there is the new community and non-profit organization Centre d'écologie et d'agriculture urbaine de Gatineau which established at La Ferme Moore, Quebec. Here,

community gardens, fruit and vegetable production, beekeeping, and a variety of ecological and agricultural workshop and local products can be found. There are also edible landscape initiatives that were launched by the NCC within the past 5 years at Commissioner Park, as well as the current community gardens pilot project that will be implemented in the urban core in 2017.



La Ferme Moore at 670 Alexandre-Taché, Urban Lands, Qc (Source: NCC)

In Gatineau Park, farmlands are still cultivated in the Meech Creek Valley, and the Master Plan (2005) encourages agricultural and agri-tourism activities at this location. NCC staff are working to re-establish the historical farm of the Cross family, by linking the house back to the original farmlands along Cross-Loop road for an active farm open to the public.

As a whole, the use of the territory under the management and responsibility of the NCC which includes the Greenbelt, Gatineau Park, and Urban Lands shows that five different land cover type predominates the landscape: “The two most important land uses are forests (72%) and agricultural lands (10%) followed by urbanized areas (8%, mostly in the Urban Lands, but some of which are found in the Greenbelt and Gatineau Park) and freshwater systems and wetlands combined represent close to 10% of the area” (Table 2). When compared to the entire NCR, the main “differences is that forested areas are over represented in NCC lands, and that agricultural and urban areas are a less represented in NCC lands” (Dupras, 2016).

Table 2: NCC and National Capital Region Land Use Comparison

	NCC	National Capital Region
Total land area	55 000 ha	516 000 ha
Forest	72%	49%
Agricultural Lands	10%	27%
Urbanized areas	8%	14%
Freshwater systems and wetlands	10%	10%

Source: Data from Dupras, 2016

Portrait of the NCR

The National Capital Region territory comprises a dynamic urban and peri-urban agriculture and food system dynamic with specific provincial and municipal policies and regulations into which NCC lands and associated activities integrate. In Ottawa and the surrounding region, farmlands occupy about 40 percent of the municipality's rural lands. The Province of Ontario requires municipalities to protect prime agricultural areas for long-term use for local agriculture, and the Land Evaluation and Area Review (LEAR) assists in achieving this objective. In Gatineau and the MRC-des-Collines, the agricultural territory is designated and protected at the provincial level; it is the *Commission de protection du territoire agricole* (CPTAQ) which regulates land use and proposals on these lands. There are also many urban and rural agriculture policies and action plans being developed at the municipal level as the Programme d'agriculture urbaine de la Ville de Gatineau and many pilot projects like urban beekeeping, gardens, etc.

However, the Ottawa-Gatineau census metropolitan area (CMA) (Ontario part) figures in the top 5 of Canada's CMAs with the largest increases in settled area on arable land after Toronto, Montréal and Edmonton (Statistics Canada). In the last 50-60 years, 27% of the arable land use cover was permanently lost to settlements and roads on the Ontario side (Table 3). On NCC lands, most of the soil resource was protected, but the agricultural use was mainly lost to reforestation efforts of the past and public infrastructure expansion. For example in the Greenbelt, the agricultural land use cover which used to occupy the majority of the Greenbelt at the time of its creation (NCC, 1973) has been constantly decreasing to reach 28% nowadays (NCC, 2013). Half of the original 10,845 ha of farmlands found in the Greenbelt in 1961 (NCC, 1973) were converted to other uses. The NCC's maintenance of farms and agricultural lands were considered secondary to its reforestation program (NCC, 1973). The high quality of this resource becoming rare in an urban environment, and the increasing interest for urban agriculture from the community, has been leading to a resurgence of the NCC's agricultural sector.

Table 3: Current approximate agricultural land use cover and loss since 60s/70s and current predominant type of production

Territory	Current total agricultural land use cover	Agricultural land use loss	Loss in proportion of current territory	Current number of farms	Current predominant type of production
	(ha)	(ha)	(%)	(units)	
CMA-Ottawa	303,000	58,400*	27%	1200	Field crop
CMA-Gatineau	74,000	27,400*	16%	300	Livestock and forage
NCC†	6,000 ^α	5,000**	24%	90	Field crop

*from 1971 to 2011

**from 1961 to 2013

^αLand designated for agriculture as per the GB Master Plan (2013)

†Excluding Gatineau Park and Urban Lands

Sources: Statistics Canada, MAPAQ, City of Ottawa, NCC (1973)

1.4. Relevance to the Community: Multi-functionality

Social Benefits

Beyond its primary purpose of providing food, agriculture also has important contributions in the environmental, social and economic sphere (Figure 9). For example, it provides a platform for social interaction and a place for social gathering, often inter-generational. It has been observed here at Moore Farm with the establishment of the new Centre d'écologie et d'agriculture urbaine and the various agricultural and ecological activities they provide including community gardens, gardening activities, beekeeping workshops, etc..

Environmental benefits

Farmlands also have a natural capital value as they are made up of a mixture of crop lands, forested lands, orchards, wetlands, habitats, historical farmsteads, etc. They provide services such as food, fiber, fuel, natural rainwater catchment for groundwater recharge, storage of carbon in farmland soils, habitat for species, aesthetic and cultural benefits, etc. They provide opportunities for urbanites to reconnect with nature and food production through the network of open farmgates, farmstands, pick-your-own operations, Community Supported Agriculture membership, culinary trails, and food and historical excursions in the rural landscape. Regional food farms also contribute to the health of the community.

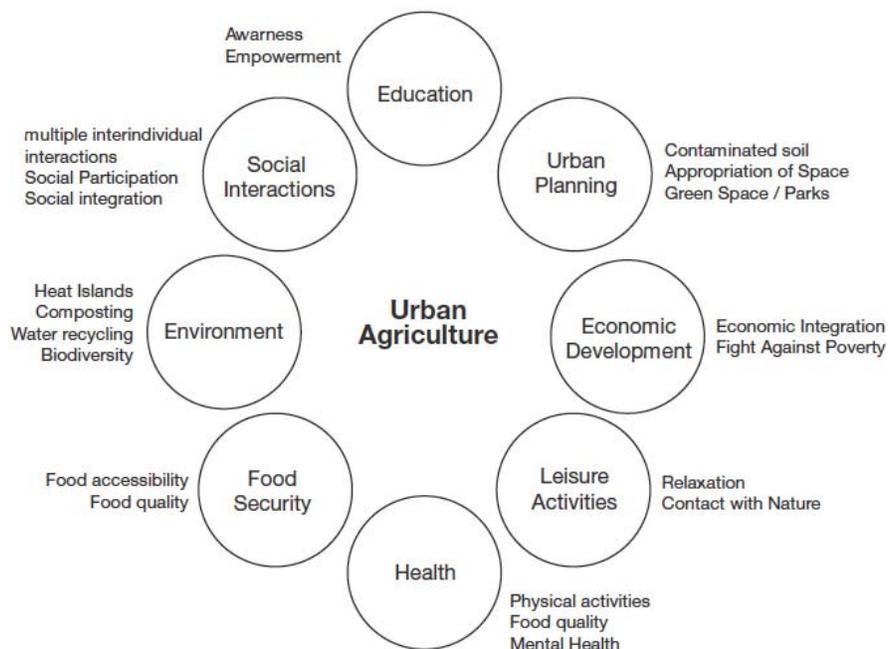


Figure 9: Multi-functionality of agriculture (Source: Duchemin, 2009)

Agriculture is not only a provider of ecosystem services but also benefits from them. Agro-environmental features and farming practices as windbreaks, buffer strips and erosion control along waterways, etc. protect the resources, increase biodiversity and are beneficial for agriculture. Many governmental cost-share programs are available for the farmers to implement these initiatives. It also provides them a tool to stay economically viable while keeping pace with increasing environmental targets. For example, the federal-provincial's grant program Growing

Forward delivered by the OSCIA (Ontario Soil and Crop Improvement Association), or the municipal's Clean Water Program delivered by the Conservation Authorities offer cost-sharing opportunities for projects and practices that improve both the environment and the agricultural operation. Clean air, soil and water are everyone's priority. Building on the tradition of Canadian farmers as stewards of the land, the NCC continues to invest and work with farmers to ensure that food grown in the Greenbelt comes from sustainable farming practices.



Encouraging the regional food supply also provides benefits by reducing the travelling distance of imported food and the associated greenhouse gas (GHG) emission. A United States study in 1998 demonstrated that food traveled on average 1,518 miles (approx. 2 429 km) to get to destinations, a 22% increase from 1981 (Pirog, 2001). A Canadian study found that imported items traveled an average of 5 364 km compared to 101 km for the local food. The imported food created 100 times more GHG emissions compared to those locally sourced (Bentley, 2005). Other studies have shown that frequent trips to shops in cars have a bigger impact on the ecological footprint than interstate transportation.



The rural landscape surrounding Ottawa/Outaouais river from Gatineau Park's hills
(Source :<http://accentnature.ca/gallery/paysages-2/>)

2. The Strategy

2.1. To Carry Forward : Success Stories from the Past 7 years

Since 2010, the NCC has been progressively adopting and implementing sustainable agriculture objectives following the support, in principle, of 2 EMC submissions, 2 EMC decisions and 1 Board of Directors presentation to work towards and implement Sustainable Agriculture in the Greenbelt (January 2010, March 2011 and April 2011, respectively). Here are a few success stories highlighting the positive impacts of the initiative:

Number of farms leased in line with Sustainable Agriculture objectives:

Since 2011, vacant farms have been advertised to attract talented and motivated individuals with the necessary agricultural background to run a farm relevant for the community. Individuals are required to submit a farm business proposal including a description of their project. It is then assessed in function of the Sustainable Agriculture objectives of the NCC, and for feasibility and financial viability. Using this process, 28 farms were advertised, about a hundred farm business proposals were received, and 21 new sustainable farm projects have been established in the Greenbelt in the last 6 years.

Optimizing the NCC's Built and Natural Assets for Resiliency, Diversity and Heritage:

In 2013, a review of the territory and its farmlands, houses and past and future uses was conducted in order to diversify the agricultural sector and increase the contribution to the local food supply. The review resulted in a map with different options to revisit the farm boundaries and link existing houses back to the land to have active family farms (Appendix 2). Areas that would benefit from new construction or from existing houses were also identified, including the possibility of moving houses in good condition from ecological conservation area towards agricultural conservation areas instead of demolishing them. As a result, 15 existing houses, including historical farmhouses such as 4839 Ridge Road and 2090 Innes, or residential bungalows like 4777 Ridge, were linked back to cultivated lands to optimize underused parcels or diversify large areas of field crops. These farms now contribute to diversifying NCR agriculture and bring dynamism to the community while re-establishing and celebrating Canada's living agricultural legacy through natural and built heritage.



Picture of 4839 Ridge Rd's farmhouse back in use for an agricultural purpose and Earl and Gwen Whyte, descendants of the Whyte family that farmed the property from 1887 to 1960 (Source: NCC)

Area of Vacant Farmlands and Properties Back into Production and Revenue Generated:

Over the past several years, the NCC has reduced its vacant agricultural farmlands from a high of 16% in 2012 to its current vacancy rate of 0%. Vacant farmlands are now back into production to optimize their contribution to the regional food supply and the resiliency of the National Capital. Moreover, an increased importance and focus has been on locally produced food for human consumption as well as relevance to the community as more and more citizens are seeking access to small and medium sized family farms.

Showcasing the Greenbelt as a Living Example of Canada's Farming Heritage:

Since 2015, oral history is being collected from the NCR community in collaboration with students of Carleton University (i.e. The Whytes of Ridge Rd, Les Chéniers de la rue Renaud, the Boyds of River Rd., etc.). In 2015, a historical plaque was installed at La Ferme d'Orléans, an initiative originating from the Société Franco-Ontarienne du Patrimoine et d'Histoire d'Orléans that was realized with the participation of the NCC. In 2016, a partnership with the Heritage Carpentry and Joinery Program of Algonquin College resulted in the assessment of 80 Greenbelt historical barns and a 10-year restoration plan to rehabilitate and adapt them for contemporary agricultural and community uses. The Log Farm Artifacts Collection, which regroups horse-drawn farm equipment and household furniture from European settlers in the 1850's, was re-inventoried and shared between Moore Farm and the Log Farm for exhibition within the 150th celebrations and beyond.

Connecting Greenbelt Farmers and National Capital Consumers:

Since 2015, the Agricultural Portfolio has been organizing a kiosk at the Governor General's Savour Fall event featuring products grown in the Greenbelt. Greenbelt farmers were also invited to share food samples with the public and raise awareness about NCC Greenbelt farms and the wide range of fresh and products available. Also since 2015, the NCC has organized an annual tenant engagement BBQ. In 2016, an Epicurean Adventure event linking products grown in the Greenbelt with NCC downtown restaurants was available for the public to enjoy through Gatineau Park's Fall Rhapsody program. The Agricultural Portfolio is also working on a map featuring farms available for public visits and agricultural products offered at these farms.

Establishment of an Incubator Farm in the Greenbelt

In 2014, a lease was signed with Just Food to establish an incubator farm at 16 Tauvette. The incubator farm provides small parcels of lands and basic agricultural infrastructure and equipment for new generation farmers to start-up their operation. It gives them the opportunity to try their hand at it, and through trial and error establish a consumer base to start a farm operation. Just Food manages this program as well as many agricultural workshops and learning opportunities focused on soil management, food processing, etc. As a result, X farmers started a farm operation through the program and X start-up farmers (numbers to be confirmed) transitioned to real farmsteads in the Greenbelt that they are now renting from the NCC.

Repatriation of the Third Party Service Provider

At the end of 2016, the NCC repatriated the responsibility of the property management services that were previously provided by a third-party service provider. This greatly improved client service and management of the built and natural assets under the NCC's responsibility.

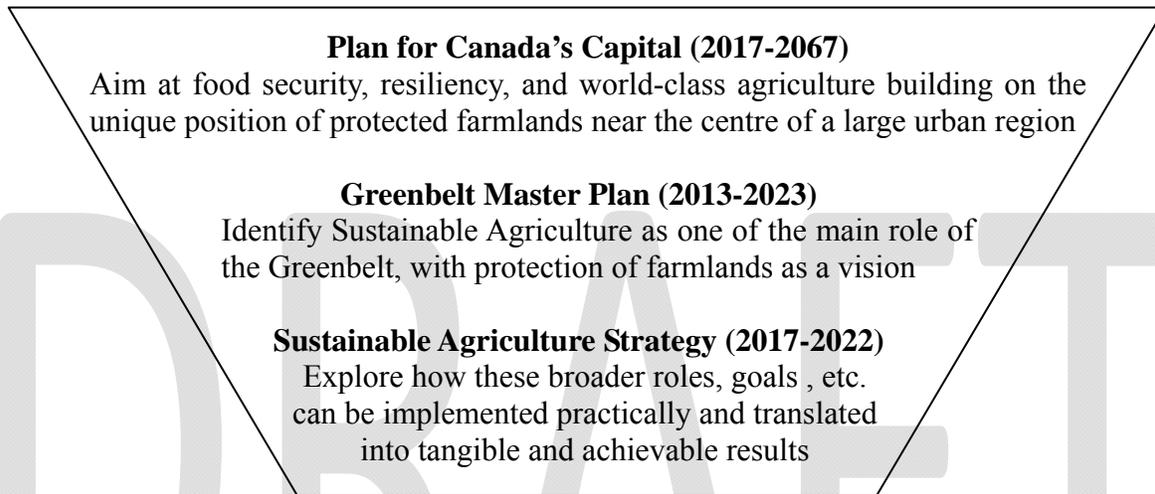
2.2. Our Mandate

National Capital Act, R.S.C., 1985, c. N-4.

An Act respecting the development and improvement of the National Capital Region

The objectives and purpose of the Commission are to prepare plans for and assist in the development, conservation and improvement of the National Capital Region so that the nature and character of the seat of the Government of Canada is in accordance with its national significance.

The NCC's Planning Framework:



The **NCC's Environmental Strategy** provides a focused agenda for environmental leadership in Canada's NCR and identifies agriculture as one of the component.

2.3. Our Vision :

The Sustainable Agriculture and Food Strategy in the context of the National Capital Region, and its unique position of protected agricultural lands near the center of a large urban region, involves a shift towards more farms producing food which can be consumed locally, an enhanced contribution to food security and regional resiliency, while ensuring a sustainable use of the soil and water resources, providing a suitable economic return for its agricultural producers, is economically balanced for the NCC and is more visible and relevant to the community and a model for all citizens as the Capital city.

2.4. Guiding Principles:

The NCC aims to:

- Be a model in integrating food and agriculture in planning the Capital city
- Be a leader in its contribution to enhance sustainability and resiliency at the regional scale
- Be a good place to farm for agricultural producers and to get healthy local products for citizens
- Give a sense of national identity for citizens and stewards of the land
- Host world-class agriculture that provides a suitable economic return for the agricultural producer and is economically balanced for the NCC
- Apply a no net loss principle through compensation of equivalent agricultural features and functions

2.5. Main strategic concepts and directions:

Main strategic concepts	Definitions	Strategic goals and directions	Examples
Sustainability	Using the resource now in function of keeping its capacity for future generations	Enhance sustainable use of resources	Conserve soil health and water resource through best management practices
Resiliency	Capacity of a system to continue providing a function in the face of disturbance	Strengthen regional food resiliency	Support the establishment of farms that contribute to the regional food supply
Diversity	A diversified and relevant system/portfolio is more resilient and sustainable	Increase diversification of farms and products	Provide new family farms opportunities by linking NCC's houses back to productive lands
Connectivity	Visibility, relevance to the community, branding, marketing, outreach, agricultural legacy, better appreciate the present with our past, etc.	Increase visibility and connectivity (synergy)	Share with the public the farms and products grown in the Greenbelt Develop partnerships with local communities



Vegetable basket from Ekoroot Farm, 4777 Ridge Road, Greenbelt, ON (Source: NCC)

2.6. Ongoing and Proposed Initiatives/Actions/Expected Results and Indicators to Implement the Vision

The following table highlights how the broader vision goals, objectives and policies emanating from corporate plans like the Plan for Canada's Capital (2017), the Greenbelt Master Plan (2013), etc. can be implemented with concrete actions and indicators. It was developed by taking into consideration past published NCC documents (Appendix 3), the previous versions of the Sustainable Agriculture Strategy (2011-...), the recommendations from the Caldwell's independent research project (2009), the lessons learned in the past five years of implementation, and the evolution of the internal and external context, challenges and needs. Lots has been achieved in the last five years of implementation and the strategy has evolved to where we currently stand.

The achievement of the objectives herein is directly related and dependent on the will and commitment of the NCC's leaders and employees to protect farms and farmlands and to facilitate the establishment of a dynamic agricultural sector and community and develop partnerships (Appendix 4).

The higher the trust our agricultural producers have in the NCC to protect the lands for agricultural use, the higher their commitment will be in establishing thriving farms:

“The key to a robust agricultural sector is the same everywhere: the protection of the land base to farm and carry out farm-related activities”. “The perspective [of urban development on farmlands] undermines confidence in the long-term feasibility of farming, and erodes farm-owners' willingness to make the personal and financial commitments necessary to the continuation of this way of life” (Tomalty, 2015)

The achievement of the strategy is also directly related and dependent on the dynamism of the NCC's agricultural community and their willingness and commitment to establish active and sustainable farms in the Greenbelt.

The NCC's agricultural community was consulted through 1) one public consultation with the NCC for the review of the Greenbelt Master Plan in 2009, 2) five focus groups and individual meetings with Dr. Wayne Caldwell for an independent research project in 2009, 3) individual meetings with the NCC's Agricultural Officer for the development of the first version of the strategy in 2011 and now 4) with this version of the strategy with nine Greenbelt's farmers representatives. A draft of the strategy was provided to them for their input and feedback. take into consideration their perspectives from the field, current and future needs, and what would facilitate implementation. Their input was vital to the strategy so that it translates into tangible and achievable results.

It is recommended that a Consultative Agricultural Committee be formed, composed of Greenbelt farmers, public servants involved in the Agricultural Portfolio management, and internal and external experts. This committee would follow-up on the measures implemented, facilitate pilot projects, identify needs and challenges, identify facilitating measures, investment plans, and evaluate the progress of the strategy.

2.6. An action plan to implement this strategy: (to be synthesized)

Strategic concepts and directions	Goals/Expected results	Actions and Indicators
<p>Sustainability: Enhance sustainable use of resources</p>	<p>Built Capital (i.e. tile drainage, house, outbuilding, etc.):</p> <ul style="list-style-type: none"> -Protect and enhance agricultural capability of farms by investing and encouraging investment in agricultural assets that have long-term polyvalent agricultural use for future generations -Preserve and improve heritage farm houses and outbuildings for modern farm use as much as possible to celebrate agricultural legacy while embracing contemporary practices for current and future generations 	<ul style="list-style-type: none"> -Barn rehabilitation strategy: number of historical barns rehabilitated for a contemporary use and amount of reused material -Tile drainage strategy: assess the existing tile drainage system and the farmlands that would benefit from its installation on a priority basis -Farmhouses: maintenance for current and future generations of agricultural producers -Encourage investment in farm infrastructure through optimized conditions (e.g. long-term lease, cost-sharing opportunities, rental rates adjustment, etc.) -Reduction in the carbon footprint by using and retrofitting existing infrastructure like historical barns and reusing the historical/heritage wood material
	<p>Built and Natural Capital:</p> <ul style="list-style-type: none"> -Promote long-term sustainable and resilient farm development 	<ul style="list-style-type: none"> -Encourage long-term leases and give priority to tenants living on the land to foster tenant's care and investment in soil and infrastructure for future generations -Establish conditions to allow tenants to recoup their investments in soil and infrastructure -Seek treasury board approval for long-term 45 year leases -Seek treasury board approval to increase minimum area under long-term lease -Encourage personal and financial investment by adjusting rental rates
	<p>Natural Capital (i.e. farmland, soil, water, windbreaks, etc.) :</p> <ul style="list-style-type: none"> -Define the status of the resource and provide recommendations to protect and enhance agricultural capability -Invest and work with farmers to ensure that Greenbelt's food comes from sustainable farming practices 	<ul style="list-style-type: none"> -Assess the health of soil and give practical, adapted solutions targeting farm management practices to be implemented in the field in collaboration with tenants -Revisit the network of windbreaks so that they are efficient and beneficial for both agriculture and biodiversity (ash replacement program) -Conduct a study on the quality and quantity of groundwater for agricultural use (e.g. salinity, hydrogeology, etc.), well management and, help better select and locate new wells -Optimize food production capacity and generate a new revenue stream by leasing maple stands
	<ul style="list-style-type: none"> -Apply best management practices to conserve soil and water resource and promote biodiversity while ensuring farm productivity and viability 	<ul style="list-style-type: none"> -Seek farm projects that promote sustainable use of resources in the RFIs farms for rent program -Facilitate the use of existing cost-sharing programs by farmers to encourage agro-environmental initiatives (e.g. buffer strips along waterways, rip-rap at outlets to reduce erosion, manure storage, etc.) -Facilitate the implementation of applied and scientific research on the field to answer the producers needs and enhance the management of the resources -Establish pilot projects with farmers to assess the agro-environmental benefits and acceptability of techniques within the NCC's agricultural tenant community

Strategic concepts and directions	Goals/Expected results	Actions and Indicators
Resiliency: Strengthen regional food resiliency	-Prioritize food production for people as the main function of farmlands and optimize the use of natural and built capital to reach full capacity for food security	-Review the territory to explore houses that can be linked to productive land (every 3 years) for new family farms opportunities -Number of functional farm units established or re-established -Bring fallow farmlands back into production: area back into production -Agricultural properties vacancy rate -Optimise cultivated areas by decreasing tree encroachment surrounding farmlands
	-Increase contribution to the regional food supply and support an integrated food supply chain.	-Optimize the dynamic across portfolios by integrating food produced in the Greenbelt with the Official Residences and the 17 restaurants the NCC is hosting on federal lands downtown. -Seek farm projects that contribute to the regional food supply in the RFIs -Number/Area of farms contributing to the regional food supply, current and/or future (integrated with the NCC's Environmental Strategy) -Strengthen connections between consumers, processors and NCC's producers as part of integrating the food supply chain
	-Strive to preserve the area dedicated for food production -Seek compensation of equivalent agricultural features and functions when negative impacts from development cannot be avoided.	-Number of infrastructure projects compensated on-site and off-site for the loss of agricultural features and functions guided by the no net loss principle and mitigation measures negotiated. Where on-site restoration cannot achieve a no-net-loss for agricultural environment, seek off-site restoration to achieve agricultural restoration elsewhere at a minimum at a comparable level, and preferably at a net gain -Direct construction activities to locate on already disturbed soils -Assist farmers in resolution of conflicts that arise between normal farm operations and neighbouring urban land uses -Identify and take into consideration all agricultural resources and assets to define the alignment and assess the impact of a construction project following recognized federal, provincial and municipal standards (i.e. FLUDA, AIA, socio-economic impact under CEAA, etc)
	-Assess the resilience of the National Capital Region food system and how the NCC contributes, identify strengths and weaknesses, and identify leverage points and interventions to improve regional resilience	-Determine the food produced on NCC lands: type, quality and quantity, currently and potentially -Map/model the NCR foodshed and conduct a study on the National Capital food needs -Quantify the current and potential reduction in GHG emission by sourcing food products locally -Quantify carbon sequestration by agricultural and forested lands and carbon storage in soils (promote this environmental and ecological benefits to the public, eligibility to carbon tax?)

Strategic concepts and directions	Goals/Expected results	Actions and Indicators
Diversity: Increase diversification of farms and products	-Move towards food production for human consumption targeting regional and local markets (e.g. moving from the currently predominant field crops towards more fruit and vegetable and livestock production)	<ul style="list-style-type: none"> - Attract and engage passionate people with the knowledge through advertisements and active recruitment efforts - Select farm business proposals and projects based on their viability and criteria that will build a more food resilient, sustainable and locally relevant agriculture -Seek farm projects in the RFIs that diversify the agricultural production -Invest and work with farmers to facilitate the establishment of the required infrastructure for such operations (water wells, outbuildings, etc.)
	-Diversify the area covered by large monoculture farming operations	-Create opportunities by optimizing, and linking back built assets with farmland parcels to create or re-establish small family farms
	-Assess the agricultural potential to identify sectors displaying the required attributes for specific cultures requiring specific kind of soils, etc.	<ul style="list-style-type: none"> -Identify sectors best suited for fruit and vegetable production, livestock production, best soil types and location for orchards, vineyards, etc. (i.e. districts for certain types of production based on soil type, farm size, water, etc.) -Assess the evolution of type of farms and food produced on NCC lands, as it relates to the NCR
	- Encourage the development of value-added products that uses products grown on the farm, direct-marketing and agri-tourism	<ul style="list-style-type: none"> -Define the best locations to establish Greenbelt Farmer’s markets to meet NCR needs and optimizing NCC’s assets (using historical barns, disturbed areas, etc.) -Inventory of the existing farmstands and products available

Strategic concepts and directions	Goals/Expected results	Actions/Indicators
Connectivity: Increase visibility, outreach and synergy	-Enhance the visibility of the Greenbelt farm sector and share with visitors and communities the region's farming culture and rural heritage through the available products, protected farmlands, rural landscape and built assets	<ul style="list-style-type: none"> -Foster the development of a link between the farming and urban/peri-urban communities by communicating the wide array of agricultural products and experiences that are available in the GB (e.g. share with the public an online map featuring the farms and products grown in the Greenbelt) -Conduct and implement an interpretation plan on how to best showcase the farm sector -Recognize the contribution and role of farmers as interpreters of the Greenbelt's agricultural sector and partner with them to develop the interpretation plan and implementation -Locate and promote a Greenbelt Culinary Trail Network (e.g. Ridge Road, etc.) -Integrate the network of transportation (i.e. Greenbelt trails, maps, etc.) with the agricultural properties -Encourage direct marketing (i.e. farm stands, agri-tourism, CSA, etc.) -Develop branding (e.g. Grown in the Greenbelt logo, etc.) -Explore partnerships with others to promote NCC farm products and experiences
	-Recognize and showcase the social and environmental benefits of farmlands in an urban environment	<ul style="list-style-type: none"> -Multiply partnerships with local communities, colleges and universities -Assess and raise awareness on the current and potential social contribution of agriculture -Assess and promote the environmental and ecological benefits of farmlands (e.g. groundwater recharge, quantify carbon sequestration by agricultural and forested lands, current and potential GHG emission reduction by sourcing food products locally, carbon storage in soils, etc.)
	-Foster Greenbelt farm community development (e.g. newsletter, training, annual gathering, etc.)	<ul style="list-style-type: none"> -Number of events organized to strengthen relationship, communication and community feeling among tenants, between the NCC and tenants (e.g. Annual tenant BBQ, Newsletter, Celebrating/showcasing tenant's history and accomplishments, etc.) -Facilitate the establishment of additional community gardens
	-Celebrate Canada's living agricultural legacy by elevating the region's rich agricultural and rural heritage while embracing modern, diversified, viable and sustainable agricultural production	<ul style="list-style-type: none"> -Encourage the establishment of farmers who are willing to use and adapt historic outbuildings for their operation and open the gate to the public so that they can experience contemporary agricultural practices and products while enjoying historic and rural legacy -Continue oral history projects with the families that inhabited the Greenbelt (how the territory was used in the past, how the community was organised, events, expropriation, etc.) -How to share this info with the public (historical rally, plaque, mobile applications, etc.)

2.7. Next steps

Moving forward:

- Continue to implement the SAFS and stewards of farmland
- Return every two years to the Board to update them on “Farming with the NCC”
- Continue to deliver customer service excellence to NCC farm tenants
- Explore innovative practices in food production as indoor farming/vertical farming at the Greenbelt Research Farm
- Facilitate food access to citizens and food production by citizens on NCC’s lands: e.g. explore potential on NCC lands located in the urban core, potential with NCC’s residential and commercial properties, restaurants, explore NCC’s buildings suitability for rooftop farming, farming in parking lots, quantify contribution in urban island heat reduction, contribution against hunger and poverty, urban ecological benefits, explore community orchards, edible landscapes in parks and parkways, partnering with local food agencies or even shelters to allow gleaning of non-harvested tree fruits on urban lands, community gardens, food sovereignty, etc.
- Explore potential for farmer’s markets: partnerships and locations.

Main Questions

Resiliency: How resilient is our food system in the National Capital region and how is the NCC contributing to the food security and regional resiliency dynamic, currently and potentially?

Sustainability: What is the status of the resource (soil, water, natural and built capital, etc.) and what can we do to protect and enhance agricultural capability and natural resources?

Diversity: How can we better answer National Capital needs by optimizing the use of our resources and processes?

Connectivity: How can we enhance visibility and connectivity that will result in greater relevance to the community?

Moving forward, future studies could include/Knowledge Gaps:

- What are the food needs of the community in terms of quantity and quality?
- What is the capacity of the territory to answer local food needs, currently and potentially?
- The evolution over time in terms of production (type of crops, livestock, quantity) and occupation of the territory (farm size, number of farms, type of farms, etc.).
- What is the interaction, forte, challenges, etc. of the shared Ottawa-Gatineau/National Capital Region food system in the context of its composition? (ex. two provinces, different municipalities, different laws, regulations, resources, processes, etc.)
- Reduction of the environmental impact and climate change
- Quantify the annual reduction in GHG emission by encouraging regional food supply (public transport, trails, public transit)
- Quantify carbon sequestration by agricultural and forested lands
- Identify the social benefits that agriculture provides on NCC lands
- Review rental rates to encourage investment from tenants and establish economically viable farms in the GB

3. Conclusion (to be completed)

DRAFT

4. References (to be completed)

- Agriculture and Agri-Food Canada. *An Overview of the Canadian Agriculture and Agri-Food System 2016*. N.p.: Her Majesty the Queen in Right of Canada, Represented by the Minister of Agriculture and Agri-Food, 2016.
- Agriculture and Agri-Food Canada. *We Grow A Lot More Than You May Think*. N.p.: Her Majesty the Queen in Right of Canada, Represented by the Minister of Agriculture and Agri-Food, 2013.
- Agriculture and Food Trade Commissioner Service; Agriculture and Agri-Food Canada; Government of Canada, Government of Canada. "North American Free Trade Agreement (NAFTA)." *Agriculture and Agri-Food Canada*. Government of Canada, 21 Sept. 2007. Web. 06 Mar. 2017.
- Bentley, Stephen. *Fighting Global Warming at the Farmer's Market*. Rep. no. 2. Toronto: FoodShare, 2005.
- Bernard, Christophe. *Nourrir Nos Villes: Pour Une Gouvernance Alimentaire Durable Des Régions Urbaines*. N.p.: n.p., 2012.
- Burden, Amanda M. *New York City Population Projections by Age/Sex & Borough, 2010-2040*. New York: Department of City Planning, 2013.
- "Cauliflower Prices Spike to \$8 a Head." *CBC News*. CBC/Radio-Canada, 18 Dec. 2015. Web. 6 Mar. 2017.
- Duchemin, E., F. Wegmuller, and A.-M. Legault. "Urban Agriculture: Multi-dimensional Tools for Social Development in Poor Neighbourhoods." *Field Actions Science Reports* 2.1 (2009): 1-8. Web.
- Dupras, 2016, NATURAL CAPITAL THE ECONOMIC VALUE OF THE NATIONAL CAPITAL COMMISSION'S GREEN NETWORK
http://www.ncc-ccn.gc.ca/sites/default/files/pubs/natural_capital_economic_value_ncc_green_network_final_dec_1_web.pdf
- Harrison, Matt. "The High Price of Cauliflower: How 'putting All of Our Eggs in One Basket' Is Proving Disastrous." *Ottawa Magazine* 5 Feb. 2016: n. pag. Web. 6 Mar. 2017.
- Hofmann, Nancy, Giuseppe Filoso, and Mike Schofield. "The Loss of Dependable Agricultural Land in Canada." *Rural and Small Town Canada Analysis Bulletin* 6. No.1 (Jan. 2005): 1-16.
- Le Vallée, Jean-Charles, and Sylvain Charlebois. *2014 World Ranking Food Safety Performance*. November 2014 ed. Guelph: Conference Board of Canada, 2014. Report.

- "Milan Urban Food Policy Pact." *Milan Urban Food Policy Pact*. N.p., n.d. Web. 06 Mar. 2017.
- Pirog, Rich S., Timothy Van Pelt, Kamyar Enshayan, and Ellen Cook. "Food, Fuel, and Freeways: An Iowa Perspective on How Far Food Travels, Fuel Usage, and Greenhouse Gas Emissions." *Leopold Center Pubs and Papers* 3 (2001): 1-33.
- Schaer, Lilian. *The Real Dirt on Farming*. N.p.: Farm and Food Care Foundation, 2014. Print.
- Statistics Canada. "Human Activity and the Environment: Annual Statistics 2009." *Statistics Canada*. N.p., 08 Dec. 2016. Web. 06 Mar. 2017.
- Stat Can, 2016 Land cover and land use by census metropolitan area (CMA) and census metropolitan area-ecosystem (CMA-E), 1971, 1991, 2001 and 2011.
- Statistics Canada. "Population of Census Metropolitan Areas." *Statistics Canada*. N.p., 10 Feb. 2016. Web. 06 Mar. 2017.
- Turner, Bethaney, David Pearson, and Robert Dyball. *Food in the ACT: A Preliminary Study of Issues for the ACT Government Environment and Sustainable Development Directorate*. Canberra: U of Canberra, Australian National U, 2012.
- United Nations, Department of Economic and Social Affairs, Population Division. *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables*. Working paper no. ESA/P/WP.241. New York: United Nations, 2015.
- United Nations, Department of Economic and Social Affairs, Population Division. *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables*. Working paper no. ESA/P/WP.241. New York: United Nations, 2015.
- United Nations, Department of Economic and Social Affairs, Population Division. *World Urbanization Prospects: The 2014 Revision: Highlights*. New York: United Nations, 2014.
- USDA National Agricultural Statistics Service 2002 Census of Agriculture. "National Integrated Regional Foodshed Model." *Urban Design Lab*. N.p., n.d. Web. 06 Mar. 2017.
- Ville De Gatineau. Service De L'urbanisme Et Du Développement Durable. *L'agriculture: Aménageons Le Futur!* Gatineau: n.p., 2011.

Appendix 1: Agriculture and Food in Major Cities and the Planning Framework

In the World

It is encouraging that more and more urban regions are showing the foresight to support a diverse and sustainable food supply and take it into account in their planning processes. They're finding ways to protect farmland, and to encourage food production at the local and regional level, as key elements of maintaining vibrant, sustainable and resilient communities.

At the international level, there is the Milan Urban Food Policy Pact, now signed by 133 world cities, which acknowledges “that cities have a strategic role to play in developing sustainable food systems. Signatories believe that urban food systems are at the core of sustainable development and that the Pact and its framework for action represent a unique platform to support coordinated food policies and foster urban-rural linkages. [It acknowledge that] urban and peri-urban agriculture offers opportunities to protect and integrate biodiversity into city region landscapes and food systems, thereby contributing to synergies across food and nutrition security, ecosystem services and human well-being”, among others. In Canada, the city of Montreal, Toronto and Vancouver have signed the pact (Milan, 2015).

In Australia, the capital city Canberra and its self-governing Australian Capital Territory (ACT), which comprises 58 000 ha of farmlands and 75 farms, conducted a study in 2012 to provide a snapshot of the food produced and consumed in the ACT, from its production and distribution through to consumers' waste (ACT, 2012). It provides context within the current planning and policy frameworks being pursued by the ACT Government in relation to local food production and preserving arable land. It discusses the adoption of key principles of food sensitive urban planning and design for the planning authorities to contribute to regional food security by facilitating the creation of a resilient, socially just and environmentally sustainable food system.

In UK's Capital, there is London's Greenbelt which comprises 24 000 ha of farmlands and 470 farm holdings, which represents 59% of the Greenbelt. In England, there is also the Duchy of Cornwall which consists of 50 000 ha in total, 3500 individual lettings, including farms, commercial and residential holdings.

In the United States, national parks integrate and celebrate the agricultural land use, like the Cuyahoga National Park in Ohio. Heritage houses and barns are being preserved to be rented to farmers whom in turn take a pledge in opening their farm gate to the public and contribute to a sustainable food supply. This model inspired the NCC's model and structure as the call for interest and farm business proposal selection process.

In Canada

At the federal level, agriculture is also an integrated part of the new Rouge Park managed by Parks Canada in Toronto, which comprises 7 900 ha of publicly-owned lands, 50% of which is agriculture.

At the provincial level, there is the Greenbelt in Toronto which is privately-owned and planned through the province of Ontario planning authority. In Quebec there is the CPTAQ which regulates land-use on lands designated for an agricultural purpose throughout the province. In British Columbia, an area was preserved for an agricultural land reserve.

At the municipal level, many cities have developed plans and strategies like the Vancouver Food Strategy, or the Edmonton's food and urban agriculture strategy.

In the NCR and the NCC:

In the NCR, the food system is a dynamic, interactive system. The initiatives and successes of the NCC and the regional and municipal initiatives are tightly linked together.

At the NCC, the roles, objectives and visions of the federal agricultural lands have evolved with time. but was have always been recognized for their national significance and identified as an integral part of the planning strategies.

In the 1950's, Gréber's recommendations recognized and integrated the agricultural sector through:

- *Dedication of lands to agriculture;*
- *Conservation of sites with outstanding scenic values;*
- *Protection from undesirable development through regulations.*

The NCC Federal Land Use Plan (1988) reaffirmed the importance of the NCC agricultural lands for the National Capital and highlighted its relevant contribution at the national level :

A Capital in which agricultural and forestry lands are protected and represented as vital contributors to the image of the Capital and the nation.

The Plan for Canada's Capital (1999) highlighted the relevance of agricultural lands for the educational experience it provided in terms of rural and resource heritage:

Productive rural lands that provide opportunities to learn about Canada's rural and resource heritage.

The Greenbelt Management Plan (1982) detailed the priority objectives as follow:

- *To protect, develop and improve the farmland resources through:*
 - *proper land management and improvement practices;*
 - *the establishment and maintenance of privately operated, efficient, and modern farm enterprises;*
- *To provide an effective operating environment for farming in the interests of:*
 - *maintaining a vital and appealing rural agricultural landscape;*
 - *protecting NCC investments in buildings and land improvements;*
 - *supporting good farmland management practices.*

The Greenbelt Master Plan (1996), specified the following role (1 out of 5):

To sustain productive farms and forests that support a vibrant rural community near the Capital, thereby:

- *Symbolizing the importance of Canada's rural landscapes;*
- *Providing research and interpretation opportunities related to Canadian and regional agriculture and forestry;*
- *Contributing to a diverse, stable, and viable regional rural economy;*
- *Managing renewal resources for the benefit of future generations.*

The latest Gatineau Park Master Plan (2005) encourages agricultural activities to the Meech Creek Valley of the Lac Philippe sector and integrate agri-tourism objectives as part of this zoning sector:

The agrotourism and conservation designation applies to the Meech Creek Valley, where the dominant function is the restoration and enhancement of the agricultural, landscape and the natural and cultural heritage of the Valley.

The Urban Lands Master Plan integrates cultural and historical institutions of national agricultural interest as the Canada Agriculture Museum and the Central Experimental Research Farm run by Agriculture and Agri-Food Canada and the Canadian Food Inspection Agency.

The role of agriculture on NCC lands was strengthened in 2013 with the latest Greenbelt Master Plan its renewed vision statement :

The Greenbelt will forever protect natural systems, agriculture and opportunities for outdoor recreation and education that will inspire Canadians and contribute to the sustainability and quality of life in Canada's Capital Region.

The Plan for Canada's Capital (in progress) aims at food security, resiliency, world-class agriculture building on the unique position of protected farmlands near the centre of large urban region

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Appendix 2. Sustainable Agriculture Implementation Plan: Optimizing built and natural assets to diversify the agricultural sector



Appendix 3: Past published initiatives

Past studies, plans and initiatives lead, ordered or developed by the NCC as it relates to agriculture and food, mainly focused on the Greenbelt as this is the location where this activity was allowed on NCC lands. They are still relevant for the planning and management of the Portfolio and show the evolution of this sector in the NCC's mandate throughout the years. This list is an attempt at capturing most of them that were published in chronological order:

- Enns D. (2013) Rental Study: Farmland Rents in Eastern Ontario
- NCC (2013) A Commissioning Plan for the Canada's Capital Greenbelt Master Plan
- Caldwell, W. (2009) Canada's Capital Greenbelt: Moving Towards Sustainable Agriculture
- Guindon, P. (2009) Conservation Strategies for the Preservation of Heritage Barns in the Greenbelt
- NCC (2009)
- NCC (2008) Heritage, Visual, Functional and Future Risk Analysis of Greenbelt Farm Properties
- Harris, J. Contentworks Inc. (2006-2007) Evolution of Farming in the National Capital Greenbelt Part 1- History and Heritage; Part 2 and 3- Farmsteads
- University of British Columbia (1992) A 20/20 Vision – Sustainability in the Greenbelt and Canada's Capital
- Morrie, P. (1991) The Future Greenbelt – Agricultural Analysis
- NCC (1985) A Strategy for the Establishment of Greenbelt Agricultural Rents
- McGill University (1974-1984) Subsurface Drainage Outlet Pipe Location Manual
- McGill University (1973-1987) Drawings of Surface and Subsurface Drainage Systems and Related Works on the NCC Greenbelt Farmlands, Ottawa, Ontario, Canada - 1. Western Sector, - 2. South Eastern Sector, - 3. North Eastern Sector
- NCC (1974) Agriculture in the Greenbelt – Implementation Program
- Kirchner, J.E., Hill, F., Page, D. (1974) Agriculture in the Greenbelt
- NCC, 1973, Urban Greenbelt
- NCC (1973) The Greenbelt Farm Improvement Programme
- Page D. (1972) The Greenbelt

Appendix 4: Current and Possible Partnerships

List of organization in the domain of agriculture and food in the Gatineau-Ottawa region

OTTAWA	GATINEAU
<p>City of Ottawa Adam Brown, Manager Development Review, Rural Affairs Office Adam.brown@ottawa.ca 613-580-2424 x28352</p> <p>Carol Ruddy, Urbaniste, Direction de l'Élaboration des politiques et du Design urbain · Planner, Policy Development and Urban Design Carol.Ruddy@ottawa.ca 613 580 2424 x28457</p> <p>Julia Robertson</p>	<p>Ville de Gatineau Marie-Noëlle St-Pierre, Agente au programme jeunesse, Division – Qualité de vie et développement communautaire St-pierre.marie-noele@gatineau.ca 819-243-2345, poste 2445</p>
<p>University of Carleton Patricia Ballamingie, Associate Professor Department of Geography & Environmental Studies, Institute of Political Economy Patricia.Ballamingie@carleton.ca 613-520-2600 x 8566</p>	<p>Université du Québec en Outaouais and ISFORT Agroforesterie</p>
<p>University of Ottawa LABORATORY FOR THE INTERDISCIPLINARY STUDY OF FOOD / LABORATOIRE D'ÉTUDES INTERDISCIPLINAIRESUR L'ALIMENTATI ON http://www.lisf-leila.org/ Marie-Josée Massicotte, Associate Professor Political Studies, Social Sciences, Faculty of Social Sciences foodlab@uottawa.ca massicot@uOttawa.ca 613-562-5800 (2732)</p>	<p>Ferme Moore, Centre d'écologie et d'agriculture de Gatineau Sylvain Bertrand, président, et Claude Sirois sylvainbertrand@saveursdesmonts.ca claudesirois@ca.inter.net</p>
<p>Just Food and Savour Ottawa Just Food Farm, Strat Up Farm program, Buy Local Grow local program, local freshness/fraicheur locale, Community Gardening Network, etc. Moe Garahan, Executive Director moe@justfood.ca 613-699-6850 ext. 11</p>	<p>Table agroalimentaire de L'Outaouais Croquez l'Outaouais, Parcours Outaouais Gourmet, Local freshness/fraicheur locale, Foire Gourmande Outaouais Est Ontarien, etc. Vincent Philibert, Directeur tao@agro-outaouais.com 819 281-7676</p>
<p>Central Experimental Farm TBC</p>	<p>Marché de solidarité régionale de l'Outaouais marche.regional@gmail.com (819) 771-2915</p>

Canada Agriculture and Food Museum Musée de l'agriculture et de l'alimentation du Canada William Knight, curator/conservateur wknight@techno-science.ca 613-230-2770 x 2014	Centre de Recherche et de Développement Technologique Agricole de l'Outaouais (CREDETAO) Plate-forme agricole de L'Ange-Gardien, ferme incubateur rm.credetao@videotron.ca 819-617-3133 poste 402
Ag Can	
Stat Can	
Agricultural Institute of Canada TBC	Apiculture Gatineau/Apicentris Pablo Berlanga, vice-président Daniel Hamelin, président contact@apicentris.org
CAPI TBC	
Food Secure Canada TBC	
USC Canada Sheila Petzold, Director, Communications spetzold@usc-canada.org 613- 234-6827	
Elementary and High schools	
Ottawa Farm SHow	

Beyond

- Wayne Caldwell, UGuelph
- Richard Scott, Rouge Park
- Michael Conard, UColombia
- Eric Duchemin, UQAM
- Jennifer Keys Matt, City of Toronto

Appendix 5: Soil class map

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