

The Future of Food and Farming

Approaches for Canada's Capital Region

A Discussion Paper for
Choosing our Future





Choosing our Future Discussion Paper
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with contributions from:

City of Ottawa

City of Gatineau

National Capital Commission



Choosing our Future is an initiative led by the City of Ottawa, in partnership with the City of Gatineau and the National Capital Commission, to prepare Canada's Capital Region to meet the challenges of the 21st century. It will result in long-term strategic directions that integrate the concepts of sustainability, resiliency and liveability into all aspects of our communities.

Purpose

This series of Discussion Papers presents a range of ideas for how we can succeed in facing challenges such as demographic change; resource scarcity; globalization and economic uncertainty; rising energy and food prices; a changing climate; and sudden shocks such as extreme weather conditions and emergencies. The papers are intended to stimulate dialogue about the best ideas for the future of the region and provide the basis for our future plans.

Discussion Papers in this series include:

- The Future of Culture
- Greening the Economy
- The Future of Social Development
- The Future of Food and Farming
- The Future of Natural Systems
- The Future of Buildings and Energy Supply
- The Future of Water, Stormwater, and Wastewater Infrastructure
- The Future of Materials and Solid Waste Management
- The Future of Land Use, Growth Management and Urban Form
- The Future of Mobility

The ideas discussed in this series include many that were suggested by participants at public and stakeholder events during the process to date.

The papers, as well as other information about the initiative, can be found online at:

www.choosingourfuture.ca

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1 Introduction

1.1. The Future of Food and Farming

The food and agriculture system influences economic, social, cultural, and environmental health in the region and is an important driver of regional sustainability. In the last 5 to 10 years, local governments have begun to more fully explore their role in enabling local, sustainable food and agriculture systems. Developing strategic approaches to food and agriculture is an emerging field that is gaining support as part of government policy, land use planning, urban and open space design, and integrated infrastructure systems. Food and agriculture can provide some of the key short-, medium- and long-term opportunities for creating more sustainable, resilient communities by also contributing to the achievement of higher performance in other areas such as local economic development, reduced greenhouse gas (GHG) emissions, and improved waste management.

1.2. Summary

A range of high-level strategic directions to creating more sustainable food and agriculture systems is explored in this paper. Each strategic approach is a response to the question: “What and how much should we do to achieve a more sustainable, liveable and resilient region?” Based on public and stakeholder feedback, this paper is designed to help forge a preferred path for the long-term plans developed through Choosing our Future. The strategic directions described here are not meant to be exclusive. Rather, they are framed as questions to stimulate discussion, responses and additional ideas:

- **Protect agricultural land** — How can we work locally and provincially to coordinate and further strengthen the protection of agricultural lands for farming?
- **Reinvigorate farming** — How can we attract new farmers to agriculture and strengthen food infrastructure in the region?
- **Advance local food economies** — How can institutional food procurement, support for direct-marketing initiatives, connecting rural supply to urban markets, support local agriculture?
- **Grow food in the city** — How can we enable significant urban agriculture in the public and private realms while encouraging micro-enterprise in urban farming and increasing neighbourhood food assets?
- **Celebrate food** — How can we engage farmers, the public, chefs, academics, and others in celebrating the abundance of the region?
- **Increase system efficiency** — How can we increase efficiency and reduce the use of resources and generation of wastes (including greenhouse gases) associated with food and agriculture through import substitution, farmer-to-farmer education, and by turning food waste into enterprise opportunities?



2 Background

2.1. Food and Agriculture Systems Defined

While most people think only of the eating and farming aspects of a food system, there are a number of elements that make up a sustainable food system and that can be integrated into planning strategies. A food system is the cycle of farming, processing, transporting, distributing, celebrating, and recovering food waste in the context of larger natural, social, political, and economic driving forces. Specifically, a food system includes:

- *Production* — This refers to the growing and raising of food, including agriculture in rural, urban, and peri-urban areas. “Peri-urban” areas surround or border urban/suburban areas.
- *Processing and storage* — This refers to the process of altering raw foodstuffs to create a different, more refined product. Examples include preparation and preserving, cooking and baking, meat processing, grain milling, and other value-adding operations at a variety of scales.
- *Transportation* — This refers to the distribution and storage of both raw and processed food products.



Figure 1: The Food and Agriculture System. Source: HB Lanarc Consultants

- *Distribution and sales* — This refers to the wholesaling, retailing, and purchasing of food products. This takes place at the farm gate, grocery stores, farmers' markets, and restaurants.
- *Eating and celebration* — This refers to the consumption and enjoyment of food. It can include food-related events, as well as eating at home, restaurants, and public places.
- *Waste recovery* — This refers to the diversion, management, and utilization of organic waste (e.g. as an energy source or a fertilizer using recycled nutrients).

Local governments play a relatively modest role in a food system that involves multiple actors and jurisdictions. A food systems strategy must therefore be a highly collaborative effort involving local governments and farmers, processors, distributors, farmers' markets, various government agencies, chefs and restaurants.

Scales of growing and production

Context is everything when looking at the scales of agriculture. At the scale of *urban agriculture*, growing food in a dense area such as a downtown may entail rooftop gardens, vertical gardens, community gardens, or containers. As one travels out of the city into suburban neighbourhoods, *peri-urban agriculture* such as market gardens, small livestock, and edible landscaping in parks becomes the productive opportunity. Further out, small *artisanal farms* integrate well with the urban edge because of their scale, practices, and connection to nearby customers. In *rural areas*, large farms grow crops and raise animals that need a lot of space. Beyond the cultivated fields lies the expanse of *wild food areas* such as the grasslands, rivers, lakes, and forests; these highly productive environments naturally support a range of wild foods from game to mushrooms. When planning for food and agriculture it will be important to consider the type and scale of agriculture and how it integrates into its surrounding context.

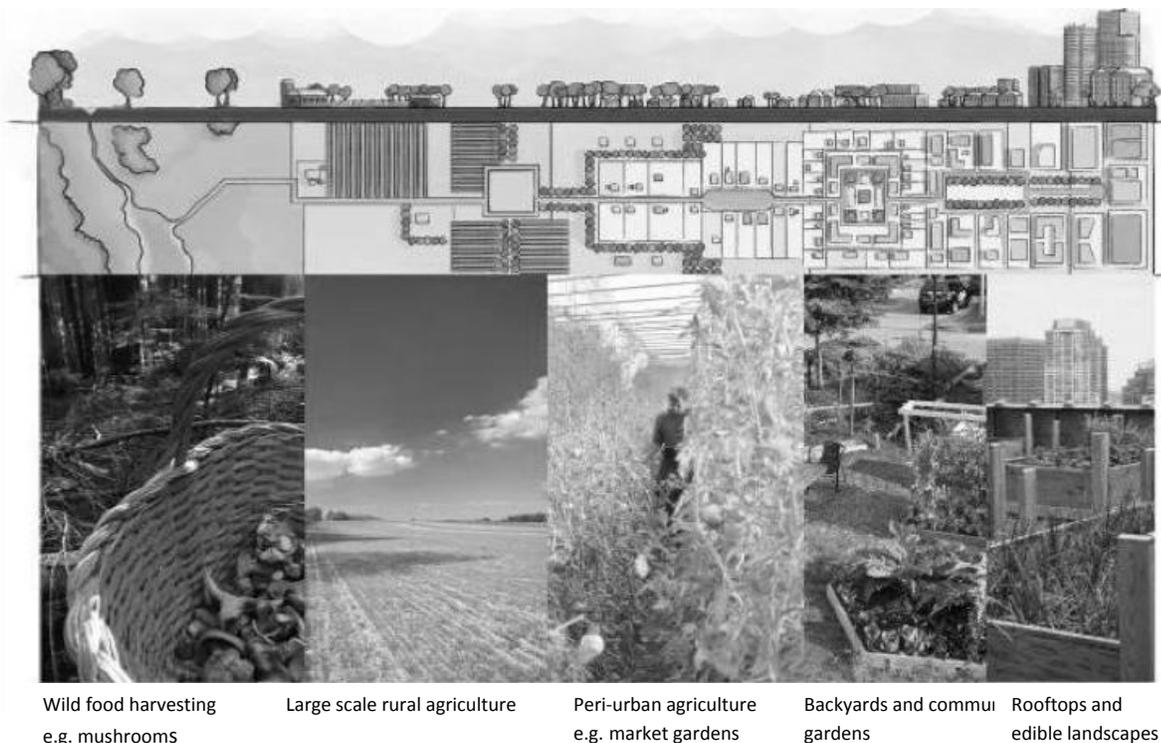


Figure 2: Wild to Urban Scales of Growing and Production. Source: HB Lanarc

2.2. Context

The Greenbelt consists of 20,000 hectares (ha) of farmland, wetlands, forest, and federal facilities on the Ontario side of the Ottawa River, and is the only greenbelt in the world that is completely public-owned. At last count (July 2008) there are 5,400 ha of farmland in the Greenbelt that support a variety of commercial and hobby farms. Cultivated agricultural lands in the Greenbelt comprise 78 properties with an average size of close to 70 ha. Of these properties 63 are farmsteads, which include houses and/or farm buildings. There are roughly 65 agricultural tenants, who are encouraged to farm in an environmentally sustainable manner. There is a diversity of farm types, including commercial and hobby farms, with the majority of farms of a small to medium size. The main types of commercial farms include: cash crops; horse farming, some with boarding stables; vegetables; dairy; and a number of mixed-use operations with berries, flowers, fruits, beef cattle, greenhouse and other products. The 1996 Greenbelt Master Plan provides the general agricultural policy and guidelines for farming in the Greenbelt and its role to sustain productive farms that support a vibrant rural community near the capital. The Master Plan is currently undergoing a review to produce a new 50-year vision.

About half of the 230,600 ha in the City of Ottawa is prime agricultural land (this includes the Greenbelt land) and most is designated in the Official Plan as Agriculture Resource where only agriculture is permitted. Most agricultural land in Ontario relies on the municipal governments for protection, guided by the Provincial Policy Statement. Additionally, local patches of agricultural production are created through community gardens. For example, the Community Gardening Network of Ottawa supports the sustainable development of community gardens within the City and aims to assist the establishment of two or more community gardens each year.

The Government of Quebec protects agricultural land through the *Act Respecting the Preservation of Agricultural Land and Agricultural Activities (PALAA)*, passed in 1978. The Act created the Commission de Protection du Territoire Agricole du Quebec (CPTAQ), which has the power to create agricultural zones. Permission is required from CPTAQ to use a parcel for any purpose other than agriculture.¹ Agricultural land in Gatineau currently represents approximately 38% of the total municipal area.

Table 1: Agriculture statistics for Ottawa and Gatineau

(Source: 2006 Census of Agriculture, Statistics Canada)

	Ottawa	Gatineau	Les Collines-de-l'Outaouais (CD)	Regional Total
Total number of operators	1,845	115	420	2380
Total number of farms	1,267	90	307	1664
Total area of agricultural land (ha)	114,647	7,394	38,498	160,539
Average area of farms (ha)	91	82	125	99
Total farm capital (market value in dollars)	1,177,594,505	51,960,573	179,516,487	1,409,071,565
Top crops	Alfalfa, soybeans, grain corn, hay and fodder, spring wheat	Hay and fodder, alfalfa, soybeans, oats, barley	Not available	

The map in Figure 3 shows the location of agricultural land in Canada's Capital Region. An additional 5,400 ha are located within the Greenbelt.

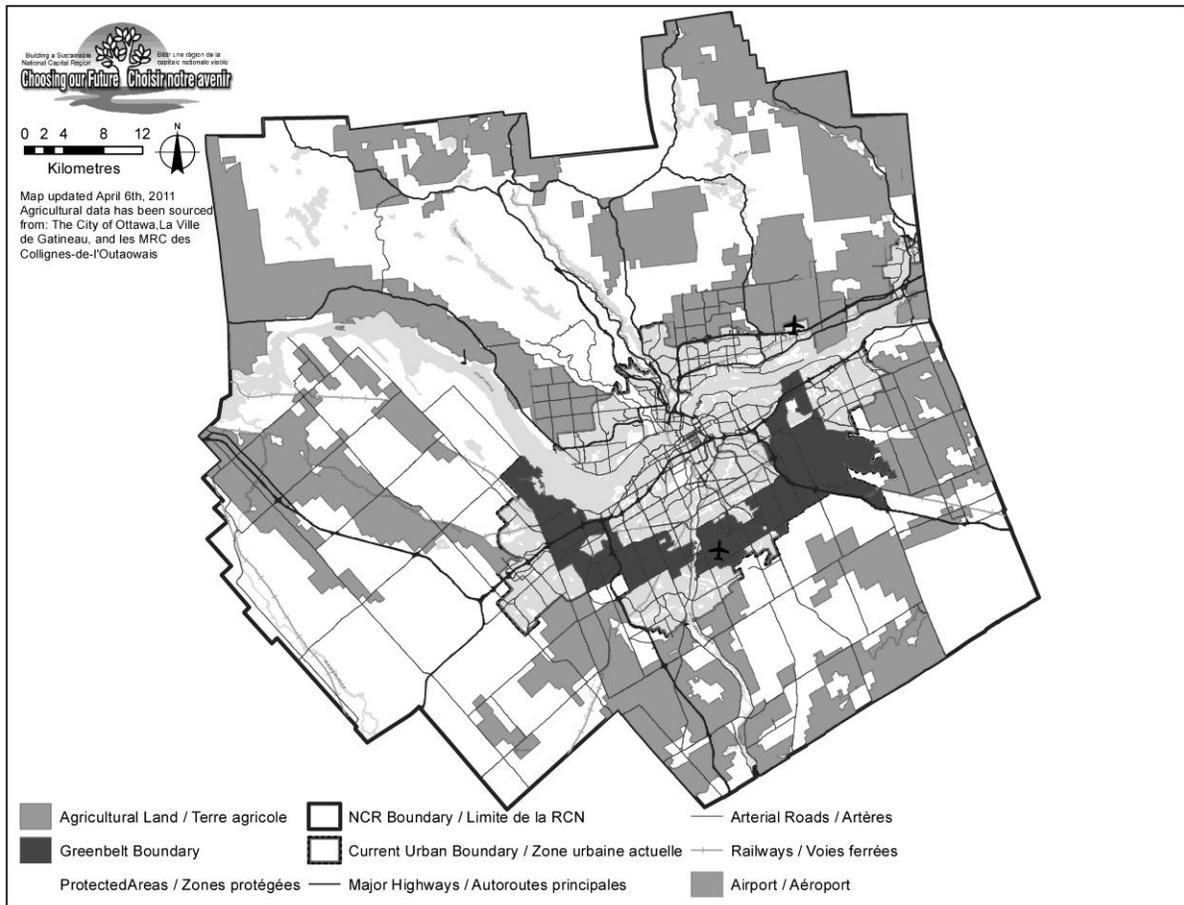


Figure 3: Agricultural Lands in Canada's Capital Region.

2.3. Challenges and Trends

Looking forward, Canada's Capital Region will need to deal with a number of growing challenges in order to maintain the high quality of life that residents currently enjoy and to advance overall regional sustainability.

Energy use and GHG emissions

Currently our food system is almost completely dependent on fossil fuels. Climate change and a reliance on fossil fuels affect food and agriculture in two main ways: (1) higher temperatures, extreme weather events and drought associated with climate change are expected to impact local agriculture and food supply in the region, and (2) the food and agriculture sector are significant contributors to GHG emissions. Trends associated with rising temperatures show a longer growing season but less water and

precipitation, and possible extreme summer storms with hail impacting late summer crops.² On a global scale, events such as drought, extreme weather, pathogen outbreaks causing disease in crops and animals, and threats to pollinator species like bees are also impacting the global food supply and food prices.³ From a regional perspective, in terms of preparing for the challenges of the 21st century, these trends suggest the need to consider options that diversify our agriculture production, increase our local food assets, and improve our ability to produce foods locally

In 2004, GHG emissions associated with agriculture alone (not counting for storage, distribution, etc.) were at 20 megatons (20 x one million tons) of CO₂e (emissions from a variety of sources measured as equivalent to carbon dioxide). There is a diminishing supply of fossil fuels, which are a source of energy used in all parts of the food system. As Figure 4 shows, the actual on-farm production only accounts for a little over 20% of the energy used in the food system. While fossil fuels are required to produce synthetic fertilizers and pesticides and provide fuel for farm machinery, there are additional energy requirements to package the food, transport the food to markets, and to store and prepare the food for consumption. In this light, a limited oil supply would require a shift in how food is produced or a shortened “food supply chain” and would increase the demand for alternative energy sources.

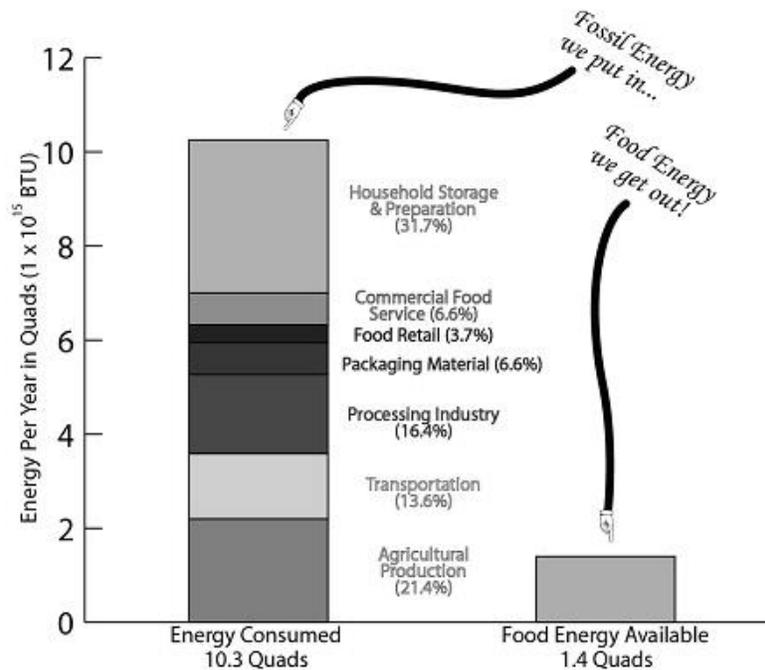


Figure 4: Energy Inputs and Outputs in the Food System.
 Source: University of Michigan http://css.snre.umich.edu/css_doc/CSS01-06.pdf

Individual and community health

Canada is experiencing an alarming increase in obesity rates. In 2004, almost 60% of Canadians were found to be in a weight range that increased their risk of developing health problems.⁴ Obesity rates among Canadian children, particularly 12–17 year-olds, have more than doubled over the past 25 years.⁵ Children who experience obesity often stay obese as adults. Diseases related to obesity include high blood pressure, diabetes, heart disease, cancer, cardiovascular disease, and Type 2 diabetes in children.⁶ Annual health care costs directly related to obesity are estimated to be over \$1 billion. Obesity can be caused by a number of factors associated with food including lack of access to healthy food choices, food prices, time available for cooking and food preparation, and nutritional knowledge.⁷

Growing towns and cities

Many Canadian urban areas, including the National Capital Region, are growing in population. Based on current forecasts, the population of Canada's Capital Region is expected to increase by about 50% between 2010 and 2060.⁸ Without careful growth management this will put increased pressure on agricultural lands as urban areas expand. About half of the land that the City of Ottawa has added to the urban land supply since 1988 has been agricultural land—a total of 1,698 ha. As the city expands, its sphere of influence extends into the next area of potential expansion. Farmland there is purchased by investors who may hold it for decades in anticipation of resale or development. While the farmland can be rented to tenant farmers, the tenants may be less willing to make significant farmland improvements given that they do not have a long-term financial stake in the property.

Farmland adjacent to village and urban areas is most secure when it is protected in broad plains. Small breaches into farmland boundaries for other uses or the creation of narrow pinch points between larger agriculture areas contribute to subsequent re-drawing of the agricultural boundary; the case is argued that the farmland to be re-purposed is not an efficient size or is not productive. Proximity of farms to villages, urban areas, and country lot subdivisions presents challenges such as complaints about the odours and sound of farm operations, and traffic on rural roads that can interfere with the safe movement of farm equipment. The large and small woodlots established within many farms, some of which are regionally significant, provide wood for farm operations, shelter for livestock, and natural habitat for wildlife, and are also vulnerable to development.

Population growth will also increase the demand for food, increasing pressure on local and global resources. Growth in other areas of the world may threaten the world's food supply. Between 2000 and 2030, the world's urban population is expected to increase by

72%; the built-up areas of cities that have 100,000 people or more could increase by 175%.⁹

Labour and demographics

Substantial labour shortages in the region across all sectors of the economy can be expected due to demographic shifts towards an aging population, workforce participation changes, competition with the developing world, insufficient educational programs and changing employer needs.¹⁰ There is an increasing concern that the future labour force of farmers is diminishing due to an aging farming population and fewer young farmers to replace those that retire. The average age of farmers in Ontario is 52 and in Quebec is 49; younger farmers are a minority.¹¹

Food security

Access to nutritious, personally acceptable food for individuals, households, and communities through sustainable means is important to the health and development of the region's population. In Ottawa and surrounding areas, several groups experience chronic food insecurity directly linked to low income. Children, single parents, newcomers and aboriginal persons have all been found to experience food insecurity.¹²

While low food prices in Canada make food financially accessible to most people, many people in Canada do not have access to a healthy diet, primarily due to low income status.¹³ Access to low-cost food does not automatically result in food security as often times affordable foods are highly processed and contain high levels of saturated fats, sugar, and salt. Food security is a state where all people at all times have access to a healthy diet through non-emergency sources. Climate change, peak oil, rising food prices and threats to local food production can further threaten the region's ability to provide an affordable and equitable food supply for all.

Capacity for food self-sufficiency

The area required to produce a healthy diet for one individual based on a mix of dairy, meat and alternatives, grains, vegetables and fruit is approximately 0.5 ha.¹⁴ If we compare the current area of productive farmland in the region with the amount of farmland needed to support the population in the region, this gives us a rough idea of the region's capacity for self sufficiency in food. The region currently has the capacity to produce 28% of all its food needs. Assuming the area of farmland remains unchanged, the impact of a growing population in 2060 may see this capacity decreased to 18% by 2060.

Table 2

Census Area	Total area (ha) of farms	Capacity for Self-Sufficiency in the CCR			
		Population in the CCR		Area (ha) needed per census population/per year	
		2006	2060	2006	2060
Ottawa	114,674	814,661	1,294,530	426,882	678,334
Gatineau	38,498	230,242	390,201	120,647	204,465
MRC	7,394	45,495	67,037	23,839	35,127
CCR Total	160,566	1,090,398	1,751,768	571,369	917,926
Farm area: area needed				0.28	0.17
Self Sufficiency Capacity				28%	17%

Food waste

In Canada we throw away over 40% of our food, and much of this food waste ends up in landfills contributing to GHG emissions.¹⁵ A study in the lower mainland of British Columbia showed that pre-consumer waste of food, primarily fresh foods, was up to 50%.¹⁶

Food shortages

The region may be impacted by global food shortages. For example, between 2005 and the summer of 2008, the price of wheat and corn tripled and the price of rice increased fivefold, causing food riots in nearly two dozen countries and pushing another 75 million people into poverty.¹⁷

Although developed countries like Canada were protected from the World Food Crisis of 2008 and its ongoing impacts, recent data shows that food prices will only continue to increase and could lead to a scenario where Canada experiences significant increases in food costs.¹⁸

Farming trends

Most farms in the region are small, with 51.5% reporting gross farm receipts of less than \$25,000. The number of these farms has decreased since 2001 while the number of large farms worth over \$1 million in operations has been increasing.¹⁹

2.4. Goals

Recognizing the need to address these issues and challenges and to envision a better future, Choosing our Future, through community outreach, has developed a set of high-level aspirational goals to define success over the long term. This discussion paper and

the strategic directions that are identified respond to a primary *Food and Agriculture* goal and a number of related goals, as follows:

Primary Goal

The local food system is sustainable and provides residents with healthy and affordable food

The region's farmers, working on a well-protected, highly productive land base, produce a great variety of foods using diverse, sustainable practices. While residents consume food from outside the region as well as modest amounts from urban areas, the region's farms and the local food system provide residents and businesses with a high-quality, healthy, and affordable supply of food.

Related Goals

Waste is reduced toward zero

Waste is reduced to the point where it can be managed in the region without compromising human and ecological health. The use of virgin materials is greatly reduced because waste is used as a resource (recycled) wherever possible.

The Region adapts to a changing climate

The Region's greenhouse emissions are reduced to the point where they can be absorbed (sequestered) by its ecosystems and technologies. The region has also ensured that it can adapt to deal with the impacts of climate change.

Water resources are cherished, conserved and protected

Regional water demand and management is consistent with the region's available water resources and meets the needs of ecological systems and other species. Wastewater and pollution are managed effectively so that the region's water supports natural aquatic ecosystems as well as our needs for fresh drinking water.

Ecosystems are healthy, protected and support biodiversity

The region continues to fulfill its traditional ecological functions, supporting connected habitats, regulating water and nutrient cycles, and providing food and shelter to all species living in the region. Residents value biodiversity and ecosystem health and understand the interconnectedness between humans, other species, and the ecosystems in which we all live.

Economic prosperity supports residents, community well-being, and ecological health

Wealth is generated with a fraction of today's material and energy throughput and with respect for the limits of planetary ecosystems and resources. The region's economy supports regional self-reliance, good jobs for residents, and contributes to a high quality-of-life for all residents. Residents and businesses also support responsibly-produced goods and services from around the world.

Other goals can be found on the project website:

www.choosingourfuture.ca.

2.5. Current Plans and Programs

There are several plans and programs in place that are related to food and agriculture in the area. These are summarized briefly below.

- Agricultural land in Quebec is protected under the *Act Respecting the Preservation of Agricultural Land and Agricultural Activities* (PALAA) and is managed by the Commission for Protection of Agricultural Land in Quebec.²⁰
- Agricultural land in Ottawa is protected under the Provincial Policy Statement, the Ottawa Official Plan, and the 1996 Greenbelt Master Plan (currently under review). The Provincial Policy Statement prohibits urban and village expansion into agricultural land unless there are no reasonable alternatives or no alternative agriculture areas of lesser value.
- The National Capital Commission produced a report in 2009 entitled "Canada's Capital Greenbelt: Moving Towards Sustainable Agriculture." The report examines particular Greenbelt farming concerns, identifies actions, and feeds into the current revision of the Greenbelt Master Plan.
- The City of Gatineau has an agricultural development program in place that aims to protect agricultural land, diversify agricultural activities, and provide support—including marketing—to sustain agricultural producers and encourage new ones. It includes investment and an agronomist position to support agriculture and secure additional funds for local producers and consumers.

Seeds of Success

Below is a list of some of the many programs and initiatives currently underway in the region:

- Just Food is a non-profit organization that promotes a just, sustainable food system in Ottawa. It works with farmers and all those involved in the food chain by connecting people and creating infrastructure that encourages the sourcing and selling of food locally. One initiative undertaken in partnership with the City of Ottawa is the development of a Buy Local Food Guide.
- Savour Ottawa, an initiative spearheaded by Ottawa Tourism, Just Food, and the City of Ottawa (Markets Management and Rural Affairs branches), works to develop and promote Ottawa and area as a premier culinary destination. Savour Ottawa promotes and celebrates local food production, verifies local producers, and helps link farmers to retailers and restaurants.
- The Community Gardening Network of Ottawa is an information and resource-sharing network supporting

- In 2004, the City of Gatineau Council adopted a Farm Development Plan that aims to protect agricultural lands, develop strategies for the use of agricultural land in peri-urban areas, and diversify the agricultural sector with agricultural tourism and the use of biomass as part of agro-forestry efforts.
- The City of Ottawa has a Rural Affairs Office to monitor and address all issues in the rural area and advocate for the perspective of rural residents in municipal decision making.
- The Plan for Canada's Capital, created in 1999, includes strategies to ensure agriculture is dedicated to areas of rich soil and agriculture heritage is preserved.²¹
- Ontario's *Farming and Food Production Protection Act* (FFPPA) was established in May 1998 to ensure that farming operations are protected from nuisance complaints and that no municipal bylaw can restrict normal farm practices.
- Foodland Ontario is a consumer promotion program of the Ontario Ministry of Agriculture, Food and Rural Affairs. This program aims to maintain consumer intent to purchase Ontario-grown foods.²²
- The Central Experimental Farm was set up in 1886 as a central research station for the federal Department of Agriculture. The Farm continues that scientific focus as the location for laboratories and research plots.



3 New Directions

3.1. Strengthening Food and Farming

Food resiliency, which is the ability of an area to sustain a secure food supply in the face of changing conditions, may well become the overarching goal for food and agriculture systems as towns, cities, regions, and provinces across the country begin to take a strategic approach to the issues and challenges of the 21st century. The strategic directions presented below offer some ideas, strategies, and practices that begin to set a path towards food resiliency in Canada's Capital Region.

Protect agricultural land

Agricultural land with good soils is the key resource for resilient food and agriculture systems. Recognizing this, Quebec has already established legislation to protect agricultural land. In a similar vein, Ottawa could explore strengthening its agricultural land protection by advocating for a provincially regulated land use designation where an overseeing body, such as an agricultural land commission, controls any land use changes to agricultural land. In this way, agricultural land is planned for at a provincial level, is removed from local politics, and has an extra level of regulation to protect it. Ottawa could also consider the merit of a provincial plan similar to Places to Grow and other provincial plans in Southern Ontario, which would identify village boundaries in the rural area, land reserved for agriculture and mineral resource extraction, and woodlands, wetlands, and other features that form the natural heritage system.

Provinces, regions, and municipalities within Canada's Capital Region may need ways to encourage new farmers to farm. One way is to make land affordable and available for new farmers and ensure that leased agricultural land is in full production. As an option, the National Capital Commission could explore creating an incentive to encourage new farmers by giving price breaks on agricultural land leases in the Greenbelt for farmers in

Long-term Leases of Agricultural Land

As the largest public landowner in the Greater Toronto Area, the Toronto and Region Conservation Authority is using its agricultural land to further sustainability in the region. Management practices have been revised in favour of longer-term leases that support tenants' returns on land management practices, promotion of local food production, and creation of new opportunities using smaller parcels, intensive production, and innovative techniques. Projects include:

- The Toronto Urban Farm, operated by municipal staff as an extension of the community garden program, combines youth employment and leadership with public awareness of food security and healthy nutrition—and increased availability of heirloom vegetables.
- A partnership with FarmStart, a non-profit organization with senior government support, trains new farmers and helps them establish ecologically and economically viable farms to supply local markets. Research and demonstration projects are also included in the project, based on 15 ha of leased land near Brampton.
- Plans to expand the Living City Campus at Koright in Vaughan will demonstrate bio-intensive farming methods and "high tunnel" greenhouses to produce vegetables year-round, ultimately leading to a certified organic vegetable operation.
- The Albion Hills Community Farm will provide food for over 48,000 meals annually at

the first years of their business.

Advance local food economies

Producers need to process, store, and market their product at good prices. In order for this to happen, local food infrastructure such as food processing facilities (e.g. washing and packing, dehydration, flash freezing, juicing, and abattoir facilities) and food storage areas (e.g. cold, dry, and frozen storage and warehouses) are necessary for capturing the value of local products. Some cities in Canada and the US are setting up multifunctional "food hubs" that collect supply from a number of local farmers in order to scale-up local food distribution capacity and offer goods that are more competitive with the market. In this way, large purchasers such as a hospital, City Hall, or a school district may purchase locally the quantity and quality of foods that they would normally purchase from food importers. This shows leadership by supporting seasonal, locally available food as well as re-investment in the local economy. In some Canadian cities and

universities, Local Food Plus has helped groups to set sustainable local food targets in

Food Hubs in Other Canadian Cities

The Stop, Toronto

The Stop is a community-operated re-purposed LEED Silver facility that has urban agriculture, education, social services, waste recovery, and farmer-direct marketing functions. Specific program areas include:

- Community gardens
- Permanent indoor farmers' market
- High-quality teaching facilities including a community kitchen and outdoor wood-fired oven
- Artist live-work studios
- Multiple education programs for learners of all ages
- Food bank and drop-in centre
- Community advocacy and civic engagement resources

Halifax Seaport Farmers' Market

A brand-new facility of 42,000 square feet was scheduled to open in the summer of 2010, to be home to the Halifax Seaport Market. The market focuses on principles of

their procurement contracts. Often these targets are increased incrementally each year.

Dalhousie has reported great success with almost 35% of food on campus coming from local producers during peak season. Enabling institutional procurement, supporting direct marketing initiatives including farmers' markets, and connecting the rural supply to urban markets, are examples of tactics that will strengthen the food and agriculture system in the region increasing its resilience, creating greater local economic benefits, and also reducing the energy and emissions associated with farming.

Bolster farming

As the average age of farmers increases, attracting new farmers into farming will become essential. Allocating land for incubator and demonstration farms, partnering with educational institutions, and bringing food and agriculture into every level of elementary, secondary, and post-secondary education can create a new awareness and respect for farming. Programs can improve direct marketing linkages and awareness around healthy, seasonal eating. An example of this is the Farm to School initiative, a program in the US and Canada that connects farmers to school cafeterias using direct marketing. The school buys produce from the farm and has some input into crop planning to meet the school's demand. This is supported with educational opportunities for students such as farm visits, healthy nutrition classes, and seasonal gardening.

Farming will become a more attractive profession as local food economies continue to grow and farming yields a higher economic return for the farmer. Local food production does not necessarily mean production of inexpensive food, especially given the consumer interest in organic food and specialty products. Creative tenure agreements (especially on government-owned lands) can assist new farmers to access land without having to raise the initial investment to purchase expensive land.

Grow and process food in the city

Local governments everywhere are supporting public interest in local food by allocating public land for community gardens and in some places requiring new multi-family development to have small plots or rooftop gardens for residents. While the current role of urban agriculture in North America is largely about community-building and education, it is possible to imagine a future where urban farming plays a significant role in producing food for city dwellers. Emerging technologies such as land-based aquaculture, algaculture, and vertical farms also offer options for producing food in urban areas. Entrepreneurs in some cities are beginning to farm patchworks of backyards as a livelihood. Allowing the sales of food from private property at farmers' markets is an opportunity for local governments to support these initiatives and micro-enterprises. Other options to explore could include demonstration projects and edible landscaping on sites and buildings; establishing community kitchens for processing and food preparation and processing skill development, increasing processing infrastructure to support artisan agriculture and the marketing of specialty goods (like organics) to residents as well as buyers outside the region.

Celebrate food

Food and farming offer a major draw for celebration. By designing the public realm with community gathering space in mind, events like harvest festivals, farmers' markets, wine tastings, speaking events, and trade shows become part of the culture and identity of the area. This provides a key opportunity to engage farmers, the public, chefs, academics, and others in celebrating the abundance of the region. The Savour Ottawa initiative has made great steps in highlighting local food as a unique and valuable piece of the region's identity.

Increase system efficiencies

There is a significant amount of waste in our food and agriculture system. Household kitchens produce food waste, although composting this material offsets this loss. Outside the kitchen, the fuel consumption associated with bringing in foods from far away that are or could be grown locally, or letting produce rot in the field because there is not enough storage space or processing facilities, are both areas of "low-hanging fruit" where greater efficiency is possible. Farmer-to-farmer outreach and education programs for reducing or eliminating fossil fuel consumption and increasing efficiencies

could help the agriculture sector to counter rising fuel prices and decrease GHG emissions. Farmland is also an efficient carbon sink, absorbing a significant amount of carbon from the atmosphere and thereby reducing the impact of emissions. Employing farm stewardship practices for cropping systems, pest management, and other practices funded through the Canada-Ontario Farm Stewardship Program could help reduce farm costs and the use of fossil fuels.

Supporting enterprise models that use unwanted produce to create new value-added products could not only decrease waste but could also create jobs and more local food options. Import substitution is another direction to consider. As an example, Ontario imports apples from New Zealand even though 38% of Canada's apple-growing area is in the province; much of the Canadian apple crop is exported.^{xxiii}

3.2. Conclusion

The region must learn to deal with new trends impacting food and agriculture systems such as rising energy and food costs, health, population growth, labour and demographics, and food security. The strategic directions presented are options to consider as the Capital Region prepares to respond to these challenges and issues, turning them into key opportunities to bolster our sustainability performance.

While the agriculture sector is itself central to these discussions, Ottawa, Gatineau, and the National Capital Commission can play an important leadership, research, and facilitation role to initiate change. Ultimately, much of this change will begin with the consumer making choices to purchase more sustainable foods. Many labelling schemes are trying to empower consumer choice by requiring the listing of genetically modified organisms, organically grown ingredients, the product's carbon footprint, and fair trade sourcing. Ideally, there would be one comprehensive label that was mandatory and federally regulated for all foods.

Consumer interest in how food is grown, processed, and handled before reaching the kitchen table is increasing as a result of new food technologies, concerns about food safety, and many other influential factors. Food is a central part of all celebrations and local food is especially welcome on home tables and in restaurants catering to discerning customers. The options provided in this discussion paper represent choices that will help strengthen our food infrastructure and advance local food economies on a sustainable basis.

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