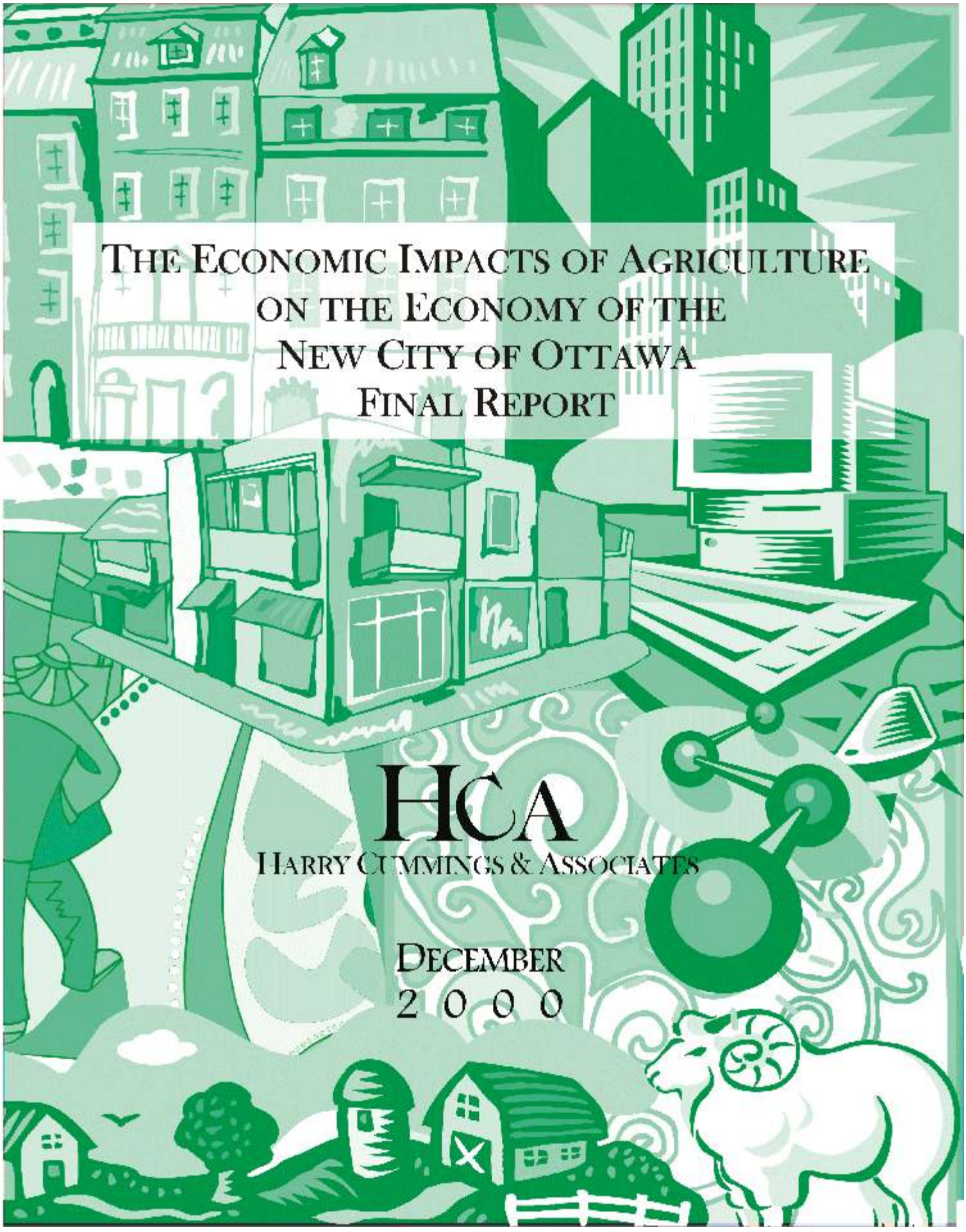

The Economic Impacts of Agriculture on the Economy of the New City of Ottawa
Final Report

HCA
Harry Cummings & Associates

December
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The Economic Impacts of Agriculture on the Economy of the New City of Ottawa

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The New City of Ottawa
Agricultural Sector Assessment

Executive Summary

The new City of Ottawa is distinct in that it features a large agricultural base surrounding an urban core, the result of a recent municipal restructuring process. Along with its status as Canada's leading high tech centre, the new City of Ottawa can now boast of having the largest agricultural economy of any major city in Canada. With over $136 million in farm gate sales in 1996, the new City of Ottawa generated more farm revenue than Toronto, Montreal, Vancouver, Edmonton and Calgary combined. The new City of Ottawa also ranks high in Eastern Ontario where it generated 17% of all farm gate sales and led every county in agricultural jobs in 1996. Furthermore, farm gate sales in the new City of Ottawa showed a substantial rate of increase between 1990 and 1995 rising 14.5%. This has kept the City on pace with the rate of growth experienced at the provincial level while doubling the pace of growth experienced in Eastern Ontario.

Agriculture is clearly a key element of the new City of Ottawa economy. However, gaining recognition of agriculture's value has not come easily. Observers often interpret the general decline in farm numbers and farm jobs as a sign that the industry is fading. On closer examination, the agricultural sector remains an important engine of economic growth. At the provincial level farm gate sales experienced an average annual increase of 3.5%, rising from $5.5 billion in 1985 to $7.7 billion in 1995. Projected farm gate sales of $8.8 billion for 1999 suggest that agriculture is continuing on its course of growth. Furthermore, the simultaneous increase in farm gate sales and the decline in farm jobs implies an increase in the productivity of farm workers and more capital intensive operations. Ultimately, these trends inspired a number of individuals and interest groups from the agriculture sector to question whether the decline in agriculture was being overstated.

One outcome of the discussion process was a series of studies designed to assess the broader role or 'impact' of agriculture at the local or regional level. Dr. Harry Cummings, a private consultant and professor in the School of Rural Planning & Development at the University of Guelph, has overseen much of the research in this area to date. The first study in the series looked at the largest agricultural county in the province, Huron County. Subsequent studies were completed in South, Central and Eastern Ontario. The focus of this report is the new City of Ottawa, formerly the Regional Municipality of Ottawa-Carleton.

With the completion of this study and a concurrent study in Lanark and Renfrew Counties, all of Eastern Ontario will have been assessed using the same methodology. As in the other studies that have been completed, the basic focus of this research is on sales and jobs related to agriculture, directly or indirectly. The study involves a combination of 'economic base' and 'input-output like' methods and relies on data collected from Statistics Canada, the Ontario Ministry of Agriculture, Food & Rural Affairs, previous impact studies and a survey of agriculture-related businesses located in the new City of Ottawa.

The jobs and sales data compiled by this study indicates that there are 10,021 jobs (2.5% of the study areas' total labour force) tied to the agricultural sector in the new City of Ottawa and over $402 million in sales from farms and businesses that buy from and sell to farms per annum. The employment multiplier indicates that for every agricultural job in the new City of Ottawa, there are an additional 1.8 jobs off the farm in the wider economy, serving the needs of local farm operators. The sales expenditure multiplier indicates that for each dollar in farm gate sales, there are an additional $1.94 in sales by businesses that deal with farmers.

Every area of the new City of Ottawa with the exception of Kanata and Goulbourn, experienced growth in farm gate sales between 1990 and 1995. These two areas also experienced the largest rate of farm land loss between 1991 and 1996. During the same period, Kanata and Goulbourn experienced population growth rates that were more than double the rate of the provincial level. While it appears that the new City of Ottawa has large areas of land with marginal agricultural value, the bulk of this land is not located in close proximity to existing urban centres. As such the development that is occurring may be encroaching onto land designated as having good agricultural potential. Continued development on and around 'designated' areas will diminish the availability of lands that possess soils best suited for agricultural production and ultimately undermine the viability of the local agricultural industry. Presently, about 50% of the land area in the new City of Ottawa consists of soils that are considered suitable for sustained agricultural production. In contrast, lands deemed suitable for sustained production in the neighbouring counties of Lanark and Renfrew make up less than 15% of the total land area in each county. The strength of the agricultural sector in the new City of Ottawa is closely linked to the preservation of agricultural resource areas.

Agriculture production in the new City of Ottawa is diverse. The variety of production is in part, a factor of the large area of soils in the region that are suitable for the production of common field crops. Overall, the new City of Ottawa has a greater proportion of its farm land base in crop production than is found across the Eastern Ontario region as a whole.

With respect to farm type, beef farms were the most numerous type of farm enterprise in the new City of Ottawa in 1996. Beef farms are prominent in West Carleton and Osgoode. Dairy farms ranked second and appear to be more concentrated in Osgoode, Cumberland and West Carleton. Hog and poultry farms are relatively few in number across the new City of Ottawa and make up a small proportion of all farm types in the study area. Between 1986 and 1996, the study area experienced a decline in dairy and beef type farms and an increase in field crop and miscellaneous specialty farms.

The decline in dairy and beef farms should not be interpreted as a sign that these sectors are fading in the study area. While the total number of dairy farm operations declined by 25% between 1986 and 1996, the number of dairy cows in the new City of Ottawa declined by only 13.6%. During the same period total milk production declined by only 5%. These numbers suggest that dairy herds are becoming larger in the new City of Ottawa as well as more efficient. Additionally, while the total number of beef farms in the new City of Ottawa declined by 35% between 1986 and 1996, the total number of beef cows actually increased by 11.6%.

Growth associated with the field crop sector has been centred around increases in farms producing soybeans. Production in soybeans increased from 3,500 acres in 1986 to 20,000 acres in 1996.

The other sector that experienced considerable growth is the specialty farm. This includes production activities such as honey production, mushroom production, Christmas trees, sod production, maple syrup production, floriculture, etc. The number of specialty farms increased from 162 farms in 1986 to 261 farms in 1996.

One of the more overlooked specialty industries is the horse industry. The equine industry in new City of Ottawa ranks first among all counties in Eastern Ontario in terms of annual expenditures and horse numbers. With just over 25% of the total horse population in Eastern Ontario, the local equine industry generates an estimated $18.2 million in annual expenditures.

The data on average farm size suggest that farms in the study area are comparable to the provincial average of 205 acres but smaller than the average farm size associated with the Eastern Ontario region as a whole (238 acres). Consistent with trends at the provincial level, average farm size in Ottawa increased between 1991 and 1996.

The value of agricultural production in the new City of Ottawa is substantial. Farm gate sales in the study area amounted to $136.7 million in 1995, an increase of over $17 million, or 14.5% over 1990. The rate of growth in farm gate sales for the new City of Ottawa was consistent with the province as a whole but substantially higher than the 6.6% rate of growth reported for the Eastern Ontario region. Average farm gate receipts in the study area amounted to $91,600 per farm in 1995. This is lower than the average farm gate receipts reported at the provincial level ($115,000 per farm) but well above the figure reported for the Eastern Ontario region ($76,000 per farm).

The highest averages were reported in the municipalities of Nepean ($152,000 per farm), Osgoode ($135,000) and Gloucester ($127,000). Municipalities located in the western part of the study area reported average farm sales between $20,000 and $80,000 per farm. Again, these lower values reflect the more marginal soils that exist in the region. The average value of net farm receipts for the new City of Ottawa remained virtually unchanged between 1990 and 1995 at approximately $13,000 per farm. However, several municipalities reported average net farm receipts of less than $10,000 with Kanata actually recording a negative net value in 1995.

As part of the study, first-hand information was provided by primary producers through focus groups. Farmers reported on a number of trends impacting agriculture in Ottawa. Some of the more notable trends include:

- consolidation of small farms into larger, more intensive farms
- loss of local infrastructure and decline of the agricultural ‘community’
- erosion of status and profile of agriculture in the public eye
- growing prominence of environmental and government regulations in the industry
- shortage of skilled labour
- the ongoing replacement of government services with private sector services

Issues relating to these trends include:

- loss of rural youth and the entry of 'urban' newcomers
- loss of land resource base and political influence
- increasing barriers to accessing capital
- the need for the public to be better educated about value and importance of agriculture
- increasingly impractical regulatory environment
- need for farmers to become better educated about regulations and more involved in the planning and policy development process
- inability of the agriculture sector to compete with wages offered by other industrial sectors
- limited or unsuitable training opportunities and employment programs that have complicated funding formulas
- farmers are gaining greater access to information, becoming more knowledgeable about what they are purchasing and where to go to seek advise from the private sector

The second component of the study involved a survey of businesses that buy from and sell to agriculture in Ottawa. The purpose of the survey was to estimate the value of sales related to agriculture and the number of jobs created by agri-related businesses.

We estimate that there are 586 businesses beyond the farm gate related to agriculture in the new City of Ottawa. The sample survey of 231 businesses, produced an estimate of 1,045 jobs among the 586 agri-related businesses that serve farm operations. From other secondary sources, we estimate that an additional 5,466 induced jobs in education, health and government services are supported by direct and indirect agricultural jobs. It is important to note that the induced component presented here, reflects an estimate of jobs associated with serving the needs of farm operations based in the new City of Ottawa. Clearly, there are a substantial number of induced jobs in the study area that are primarily involved in serving agri-related interests outside the study area through the offices of federal government departments based in Ottawa.

One of the older and larger federal departments is the Department of Agriculture and Agri-Food Canada (AAFC). In addition to administering several service branches (Research, Strategic Policy, Market & Industry Services, etc.), AAFC oversees a number of large agencies that are based in Ottawa including the National Farm Products Council and

the Canadian Food Inspection Agency. The Canadian Dairy Commission, a crown corporation administered by AAFC, is also based in Ottawa. The Department also operates the Central Experimental Farm in Ottawa, a unique agriculture research facility situated on 1,200 acres and entirely surrounded by urban development. The Central Experimental Farm is home to the Eastern Cereal and Oilseed Research Centre.

The head office of a number national farm organizations are also located in Ottawa including the Agricultural Institute of Canada and the Canadian Federation of Agriculture.

When direct, indirect and induced jobs are combined, the total employment contribution of agriculture in the new City of Ottawa amounts to just over 10,000 jobs. With respect to sales, we estimate that the $136.7 million in farm gate sales produced an additional $265 million in agri-related sales across the study area.

Selected data indicate that the study area is very active in exporting agri-related products and services beyond its borders. Sales of agri-related goods and services beyond the borders of the study area accounted for 36% of total sales for the businesses surveyed. This represents a much higher level of export activity than was found in other counties of Eastern Ontario. A wide range of industrial sectors are involved in exporting agri-related goods including transportation & storage, construction, wholesale trade, retail trade and manufacturing. The majority of export sales for agri-related businesses based in Ottawa are directed at other parts of Ontario.

The study on the impacts of Agriculture on the economy of the new City of Ottawa reveals the extensive linkages that agriculture has with other sectors of the economy and its capacity to produce local economic benefits that extend well beyond the farm gate. Planners and policymakers need to view agriculture in the context of the overall benefits and opportunities it provides. Indeed, the future of the agricultural sector in the new City of Ottawa depends very much on the ability of planners and politicians to recognize the true value of maintaining a strong agricultural sector.

Acknowledgments

There are many individuals and organizations that nurtured this study of the economic impact of agriculture in the City of Ottawa. The Ottawa-Carleton Region Federation of Agriculture and Arnprior Area Federation of Agriculture are pleased to present the findings of this study and wishes to thank the following for their assistance:

The individuals and organizations that saw a need for this study in our area, and selected individuals to sit on a Steering Committee in order to advance the idea;

Graham Lightfoot, OFA Field Representative for his support, encouragement and participation;

Jean Sullivan for her valuable leadership as Project Manager and help in making this study a reality;

The individual steering committee members who gave their time to advance their industry;

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- Human Resources Development Canada for support of the West Carleton portion of the study
- The Ottawa-Carleton Region Federation of Agriculture
- The Arnprior Area Federation of Agriculture
- Ottawa Valley Association for Agricultural Self Reliance

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The businesses that participated in the study. Without their kind cooperation, this work could not have been done. Thank you to all who offered their time and information.

Agriculture is a valuable resource to our area. May we continue to recognize and support this industry and see it grow and prosper in the future.

Sincerely,
Theresa Whalen-Ruiter
Chair, Agriculture Impact Study Committee for Ottawa-Carleton Federation of Agriculture
Past President, Ottawa-Carleton Region Federation of Agriculture

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Tables and Figures

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1.0 Introduction

The report is based on a study of the economic impacts of agriculture in the new City of Ottawa, prior to January 1, 2001 known as the Regional Municipality of Ottawa-Carleton. This research was completed by Harry Cummings and Associates (HCA) and was initiated and assisted by the Ottawa-Carleton Region Federation of Agriculture.

The first section of the report provides an overview of the work, the background to the study, and an introduction to the work done in the study area. The second section of the report provides information on the spatial aspects of agriculture in the new City of Ottawa. It provides maps and discussion on the agricultural characteristics of local soils using the Canada Land Inventory (CLI) classification system and the Land Evaluation and Area Review (LEAR) classification system. Soil terrain characteristics as well as climate and crop heat units for the region are also discussed in section 2. Other aspects of the agricultural base, including farmland use, farm types, and farm gate receipts and operating expenses, are mapped by municipality

The third section of the report profiles changes in population and employment in the new City of Ottawa. This includes general background information on the population such as population changes experienced in the region and the distribution of family income as compared to Eastern Ontario, Ontario and Canada. A more in-depth discussion is given to the employment situation in the area, including changes in employment numbers over time. This section provides information on the number of jobs in each sector of the economy, including agriculture, manufacturing, construction, government and service industries.

Section 4 provides information on the *direct impact* of agriculture on the new City of Ottawa economy. Farm gate sales are a strong indication of the impact agriculture has on the economy. Sales combined with agricultural jobs are the two indicators strongly emphasized within this report. Related economic figures provided will include farm operating expenses, farm capital figures and net receipts (in total, as well as per farm and per acre). Farm gate sales and agricultural jobs represent the first step in understanding the impact of agriculture on the economy of the new City of Ottawa.

Focus groups were conducted in the new City of Ottawa to provide richer and more in-depth information regarding agriculture in the region. The results of these focus groups are presented in Section 5. Primary producers were questioned about the trends in terms of farm size in recent years, as well as other current trends within the industry noted by the farmers. Topics such as the consolidation of farms into larger and more intensive farms, the decline of agricultural commodity prices, the prominence of environmental issues and the declining support for agriculture among the public were noted. Labour force issues as they relate to the industry, including the availability of qualified labour and training were discussed by farmers. The link that agriculture has with the wider economy was noted by farmers as an important issue to highlight. Pricing control, access to capital and increased costs to operate a farm were some of the important concerns raised by farmers.

Section 6 of the report provides a review of the planning policies in place within the new City of Ottawa that relate to farm ownership and operation. The review is drawn from the Official Plans of a sample of the municipalities within the new City of Ottawa as well as from the Official Plan of the former Region of Ottawa-Carleton.

Examining the *indirect* impacts of agriculture through a survey of agri-related businesses in the study area, enhances our understanding of the linkages that agriculture has with the wider economy and the way in which those linkages can contribute to benefitting other sectors of the economy such as manufacturing and retail. An analysis of the indirect impacts of agriculture on the local economy is the focus of the remainder of the report.

Section 7 provides a basic overview of economic impact analysis, including the aspects of input-output analysis, economic base approach, and multipliers. Section 8 describes the specific methodology used within this study. This includes a description of the direct, indirect and induced impacts and the methods used to derive them. Special attention is paid to the indirect impact methodology, which is the focus of this study.

Section 9 presents the results of the study, including the direct, indirect and induced impacts of agriculture. The results of the survey conducted with agriculturally related businesses to estimate the indirect impact of agriculture are reviewed. A comparison to previous studies that have been completed using the same methodology is also provided.

The final section of the report offers some conclusions on the state of the agricultural industry in the new City of Ottawa and its impact on the local economy.

1.1 Background to the Study Methodology

The study focuses on dollars and jobs created by agriculture. The methodology relies mainly on 'input-output' analysis as a tool for assessing the impact of agriculture. This approach depicts the economy as a series of sectors that buy and sell goods to each other until they reach the point of consumption. The purchases of products by sectors from other sectors are the inputs, and the sales to other sectors by a sector are the outputs.

The research presented in the report relies on data from the Population Census, Agricultural Census, surveys of Agricultural-related businesses located in the study area and information from local citizens knowledgeable of the area. The report includes a discussion of the role of agriculture in the study area economy, as well as a discussion of related socio-economic conditions.

1.2 Background to the Research Report

From a demographic perspective, the composition of the rural population has become predominantly non-farm based. By 1981, the farm-based population in rural Ontario accounted for only eighteen percent of the total rural population compared to fifty-five percent in 1931 (Dasgupta, 1988, pp.26-30). The rural economy has also undergone considerable structural change as a consequence of global economic restructuring. Restructuring of the economy came about as other regions of the world developed competitive manufacturing sectors that challenged many of the manufacturing industries that were the heart of Canada's industrial economy (steel, automobiles, farm machinery, consumer electronics, etc.). In an effort to become more competitive, Canadian firms responded by reducing the size of their domestic workforce, adopting more automation and shifting production operations offshore.

At the same time the manufacturing sector was adjusting to global restructuring, agriculture experienced problems of reorganization and restructuring in response to overproduction, a declining market for unprocessed agricultural goods, and new competition in the world market (Goe and Kenney, 1991, p140-141).

Although rural economies continue to have a strong resource base, the percentage of jobs directly employed in agriculture production has been declining in Canada since the turn of the century (Keddie, 1999, pp.11-18). The job movement out of agriculture and other resource sectors has been accompanied by growth in service sector employment. In rural Ontario, the service sector now exceeds the goods producing sector as the principal employer (Bollman and Biggs, 1992, pp.21-28; Keddie, 1999, pp.30-31).

These changes have led some analysts to question the importance of agriculture as an engine of economic growth (Whyte, 1978, p.43). Indeed, analysts and policymakers are increasingly looking to other economic activities such as tourism to spur economic growth in rural areas.

It is important to note that, even though there were declines in the number of direct jobs in agriculture (ie. on-farm jobs), the value of farm gate sales has continued to rise. Between 1986 and 1996, farm gate sales in Ontario rose from $5,511 million to $7,778 million (a growth rate of 3.5% per year) while employment on farms declined. Not only did the value of production increase, the volume of production also increased. This implies an increase in the productivity of farm workers and more capital intensive farm operations. With fewer people working on farms, the linkages to industries and sectors supporting agriculture become all the more important.

1.3 Introduction to the New City of Ottawa Research

In recent years, a number of research initiatives have been undertaken in different regions of Ontario to assess the total impact of agriculture on the local economy. The research findings indicate that agriculture has extensive industry linkages and is responsible for generating a significant number of jobs in the local economy beyond the primary production stage.

The research conducted in the combined counties of Prescott, Russell, Stormont, Dundas and Glengarry gained the attention of local Federation of Agriculture affiliates in Arnprior and Ottawa-Carleton. These Federations of Agriculture recognized that conventional economic indicators associated with agriculture were inadequate in showing the total impact agriculture has on the economy as a whole.

A working group was formed to address the issue with representatives from local Federation of Agriculture affiliates in Arnprior and Ottawa Carleton, the Regional Municipality of Ottawa Carleton and the Ontario Ministry of Agriculture, Food and Rural Affairs. An Request for Proposal was distributed by this working group. Dr. Harry Cummings, a consultant and professor at the University of Guelph School of Rural Planning and Development, won the bid to carry out the work using a similar methodology to the Huron, Simcoe, Elgin, Middlesex and Oxford, and Prescott, Russell, Stormont, Dundas and Glengarry studies. This report is the result of this work done by Dr. Cummings and his associates through his consulting firm, Harry Cummings and Associates (HCA).

2.0 Spatial Aspects of Agriculture in the New City of Ottawa

2.1 Introduction

This component of the study provides insights into the variable nature of agriculture across the study area by mapping various attributes at the municipal or census subdivision scale. As noted earlier, the Regional Municipality of Ottawa- Carleton became the new City of Ottawa on January 1, 2001. The new City of Ottawa is distinct in that it features a large agricultural base surrounding the urban core.

The new City of Ottawa is located in Eastern Ontario (Figure 1). The northern boundary of the City of Ottawa fronts the Ottawa River which also acts as the border with the Province of Quebéc. Ottawa is bordered by Lanark County in the west and Prescott and Russell County in the east. The southern boundary is marked by Stormont, Dundas and Glengarry County and Leeds & Grenville County where the Rideau River turns south-west.

The new City of Ottawa is part of the National Capital Region (NCR) which also encompasses the Communauté urbaine de l'Outaouais (CUO) and the Municipalité régionale de comté des Collines-de-l'Outaouais (MRC) on the Quebec side of the Ottawa River. The NCR takes in most of these municipalities and most of the new City of Ottawa to form the seat of the federal government. The population of the new City of Ottawa is approximately 785,000 (January 1, 2001).

The National Capital Commission (NCC) is the Crown agency whose mandate is to oversee the development of Canada's Capital Region. While the NCC is not part of the region's municipal government structure, it plays a role in planning in the new City of Ottawa through land ownership and preparation of plans and policies for federal property.

The NCC is responsible for the Greenbelt surrounding the urban core of the new City of Ottawa and Gatineau Park in the Province of Québec. The Greenbelt (Figure 1) is a unique feature of the new City of Ottawa. It consists of approximately 21,000 hectares of publicly owned land, including farms, forests, wetlands, research facilities, institutional complexes and recreational areas in a rural setting. Large tracts of land in the Greenbelt have been set aside for the conservation of the water table and the preservation of animal and plant life. A substantial area of land in the Greenbelt, 4,680 acres (22.3 % of the total), is designated as Agriculture Resource Area, most of this land is leased out to tenant farmers.

The Greenbelt was conceived in 1950 as a means to shape the expanding urban Capital and to provide a reserve of land for future public and private institutions. In 1961, the NCC entered into a 50-year forest management agreement with the Government of Ontario and much of the Greenbelt's abandoned and the marginal farmland has since

undergone reforestation. By 1966 when land purchases were complete, several organizations had already established operations in the Green belt including Bell Northern Research and Agriculture Canada. Approximately one third of NCC-owned lands are currently leased to tenants for a variety of uses ranging from farms to municipally run recreation facilities. Close to 1,000 people reside in the Greenbelt while 8,000 people work in the Greenbelt.

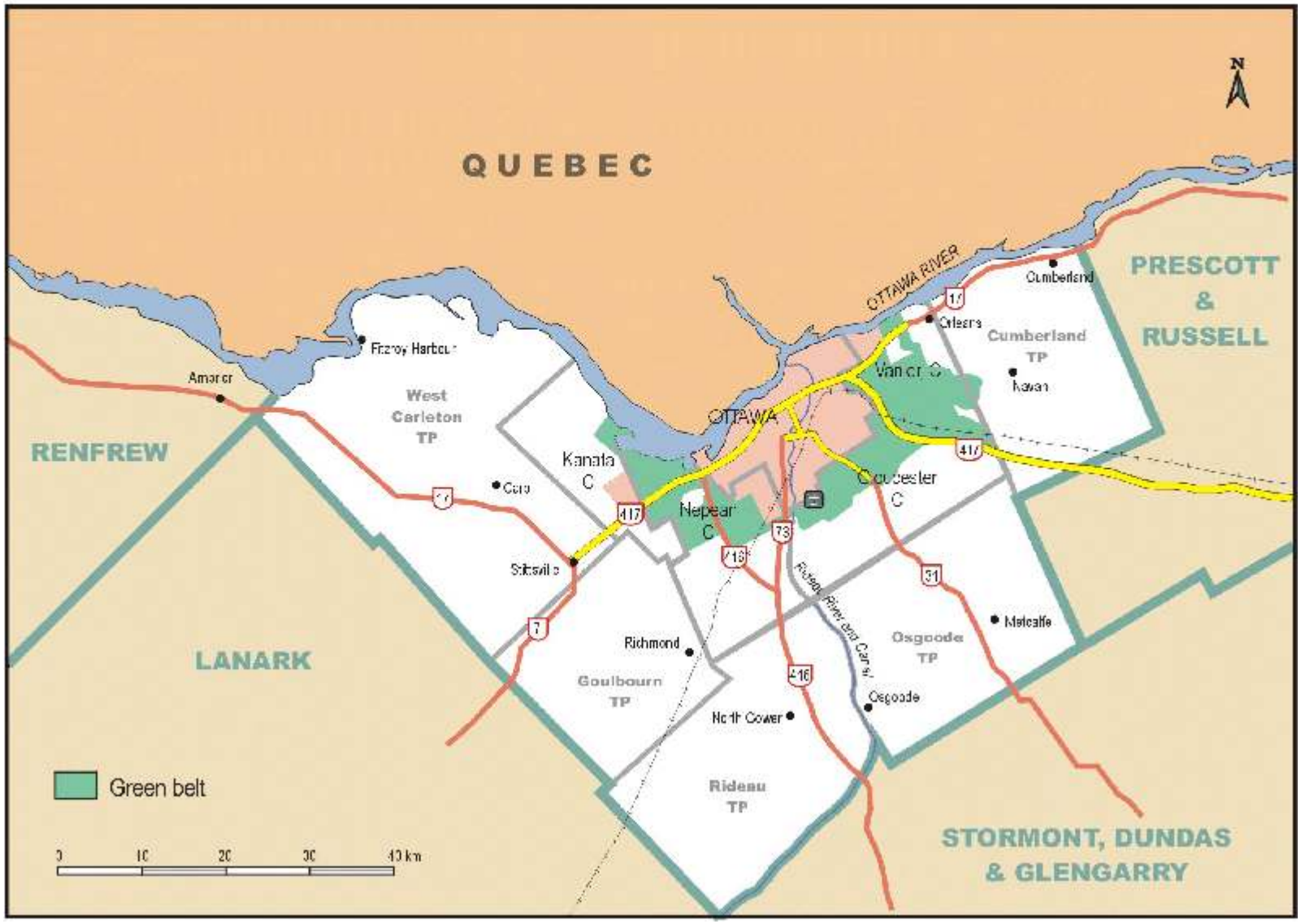
Approximately 90% of the area that constitutes the new City of Ottawa is made up of rural areas but only about 10% of the population lives in these areas. The urban area is divided into four principal sections; those inside the Greenbelt and the three urban centres outside the Greenbelt. The urban centres are the Kanata Urban Centre (Kanata and Stittsville), the Orléans Urban Centre (in Gloucester and Cumberland) and the South Urban Centre (in Nepean and Gloucester, including Leitrim). The urban centres are different from the urban area inside the Greenbelt because they were built more recently and are more residential in character.

In terms of infrastructure, the new City of Ottawa is well connected to provincial, national and international destinations through air, rail and highway linkages. Major highways in the study area include Highway 417 which makes up part of the Trans-Canada Highway, and Highway 416 (Veterans Memorial Highway) which links the urban core to Highway 401 (Figure 1). Ottawa is approximately 200km from Montreal and 400km from Toronto. The region is within 100km of the United States border. Air and rail services link Ottawa to such cities in the United States as New York, Washington, and Boston.

In 1996, the Regional Municipality of Ottawa-Carleton consisted of 11 census subdivisions (CSDs) or municipalities (Figure 1). The Census of Agriculture, published every five years by Statistics Canada, provides data on agriculture at the scale of the CSD. As noted earlier in the report, agricultural data associated with the ‘old’ City of Ottawa and Nepean were combined by Statistics Canada to protect the confidentiality of the small number of farm operations in Ottawa. Most of the data presented in this section, with the exception of data on soils, has been taken from data collected by Statistics Canada.

Figure 1

New City of Ottawa - Census Subdivisions



2.2 Agricultural Characteristics of Soils

Farmland is the predominant land use in the new City of Ottawa. In 1996, farmland accounted for 44% (296,807 acres) of the total land area in the new City of Ottawa. This represents 12% of the total farm land area in the Eastern Ontario region.

The Official Plans for the Regional Municipality of Ottawa-Carleton (RMOC) describe the local agricultural industry as fading and that as a result farmlands are at risk of being lost to other endeavours that are viewed as having greater economic benefits. The Provincial Policy Statement (Government of Ontario, Section 2.1, 1996) requires that municipalities protect prime agricultural areas for long-term agricultural use. 'Prime agricultural areas' are defined as those where Canada Land Inventory Soil Classes 1, 2 and 3 predominate.

In the Canada Land Inventory (CLI) classification system of land capability for agriculture, mineral soils are grouped into seven classes according to their potential and limitations for agricultural use (Environment Canada, 1980:1). The most highly rated soils, those having no significant limitations for cropping, are designated Class 1. Soils with no agricultural potential are designated Class 7. Soils designated 2 to 6 indicate, in declining order, capability for agriculture. For organic soils a separate category, Class 0, was established.

Classes 1, 2 and 3 are considered suitable for sustained production of common field crops if specified management practices are observed. Class 4 is physically marginal for sustained arable agriculture. Class 5 is capable of use only for permanent pasture and hay. Class 6 is capable of use only for grazing and Class 7 soils are considered to be unsuitable for agriculture (although specialty certain specialty crops such as tobacco thrive under very controlled conditions in Class 7 soils). While the soil areas in Classes 1 to 4 are suited for cultivated crops, they are also suited for permanent pasture. Soil areas in all classes may be suited for forestry, wildlife and recreational uses. Organic soils and specialty crops such as tobacco, fruits and vegetables are not considered in this classification system. Although the ratings are based on the characteristics of land for growing field crops, they have some application to other agricultural uses. A soil rated Class 1 for field crops is generally excellent for garden crops, orchards, small fruits and nurseries (Shut & Wilson, 1987:77). Summary descriptions of these soil classes are as follows (Environment Canada, 1980:1):

Class 1: ***No significant limitations in Use for Crops.*** The soils are deep, well to perfectly drained, hold moisture well and in a virgin state are well supplied with plant nutrients. They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for a wide range of field crops.

Class 2: ***Moderate limitations that restrict the range of crops or require moderate conservation practices.*** The soils are deep and hold moisture well. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a fairly wide range of cops.

Class 3: ***Moderately severe limitations that restrict the range of crops or require special conservation practices.*** The limitations are more severe than Class 2 soils. They affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management they are fair to moderately high in productivity for a fair range of crops.

Class 4: ***Severe limitations that restrict the range of crops or require special conservation practices, or both.*** The limitations seriously affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. The soils are low to fair in productivity for a fair range of crops but may have high productivity for a specially adapted crop.

Class 5: ***Very severe limitations that restrict their capability to produce perennial forage crops, and improvement practices are feasible.*** The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants, and may be improved by use of farm machinery.

Class 6: ***Capable only of producing perennial forage crops and improvement practices are not feasible.*** The soils provide some sustained grazing for farm animals, but the limitations are so severe that improvement by the use of farm machinery is impractical. The terrain may be unsuitable for use of farm machinery, or the soils may not respond to improvement, or the grazing season may be very short.

Class 7: ***No capability for arable culture or permanent pasture.*** This class also includes rockland, other non-soil areas, and bodies of water too small to show on the maps.

Class 0: ***Organic soils.*** These soils are not placed in capability classes.

2.2.1 Soil and Terrain Characteristics

The tables from which the data are drawn (Hoffman and Noble, 1975) indicate the potential for agriculture for most of the land within the Canada Land Inventory Area in Ontario, except for areas listed as 'unmapped'. Unmapped areas are those for which information about agricultural potential is unavailable for various reasons, and include military bases, parks and large urban and other areas which have never been mapped. The total acreages of the soil capability for agriculture the seven soil classes, organic soils and unmapped areas, for the relevant areas of the Canada Land Inventory Area in Ontario are shown in Table 1.

Table 1. Acreage of Soil Capabilities in Ontario

Soil Class	Total Acres in Ontario
Class 1	4,818,520
Class 2	5,272,652
Class 3	6,240,574
Class 4	5,329,887
Class 5	3,395,346
Class 6	2,405,696
Class 7	19,850,048
Class 0	5,240,218
Unmapped	471,579
Total	**53,024,520**

Source: Hoffman and Noble, 1975:7.

Table 2 provides a breakdown for the acreages of soil capabilities in the new City of Ottawa. This information has been adapted from Hoffman and Noble (1975).
A graphic depiction of the soil capability classes is presented in Figure 2.

Table 2. Acreage of Soil Capabilities in the New City of Ottawa by Municipality

Municipality	Soil Class 1	Soil Class 2	Soil Class 3	Soil Class 4	Soil Class 5	Soil Class 6	Soil Class 7	Soil Class 0	Totals
West Carleton	20,674	23,914	18,569	5,893	10,456	39,952	18,751	16,465	154,674
Cumberland	2,375	10,690	42,140	15,900	3,650	1,410	1,055	1,410	78,630
Gloucester	5,539	16,585	40,901	13,259	5,757	8,449	125	10,643	101,258
Goulbourn	2,594	10,750	11,294	8,735	1,177	20,307	335	13,696	68,888
Kanata	1,987	2,048	4,336	875	2,635	6,885	8,455	1,665	28,886
Nepean	3,725	18,200	12,300	4,410	4,470	3,935	4,280	2,280	53,600
Osgoode	19,644	19,169	23,574	10,070	6,346	6,399	-	9,254	94,456
Rideau	8,086	23,105	8,918	3,591	7,899	26,599	-	23,010	101,208
Totals	64,624	124,461	162,032	62,733	42,390	113,936	33,001	78,423	681,600

Source: Hoffman and Noble, 1975:37

From the table above, the proportional distribution of soils across the county by capabilities for agriculture can be determined. This is presented in Table 3.

Table 3. Distribution of Soils in the New City of Ottawa by CLI Capability for Agriculture

Soil Class	Proportion of Study Area	Comments
Class 1	9.5%	Suitable for sustained production of common field crops if specified management practices are followed.
Class 2	18.3%	
Class 3	23.8%	
Class 4	9.2%	Physically marginal for sustained arable use.
Class 5	6.2%	Capable of use only for permanent pasture and hay.
Class 6	16.7%	Capable of use only for grazing.
Class 7	4.8%	Unsuitable for agriculture.
Class 0	11.5%	Organic soils

Source: Hoffman and Noble, 1975:33

As shown in Tables 3 and 4, just over 50% of the land area in the new City of Ottawa is classified as suitable for sustained production of common field crops. Several municipalities in the western part of the new City of Ottawa have a lower availability of Class 1, 2 & 3 soils on account of the precambrian bedrock (Canadian Shield) extending through the area. This geological formation extends from the villages of Fitzroy Harbour and Galetta in West Carleton to the City of Kanata. Included in this area is the Carp Ridge, an area consisting of marshlands, bare rock outcrops and thin till deposits generally less than half a metre thick (Schut & Wilson, 1987:12).

Table 4. Acres of Soil Class 1, 2 & 3 in the New City of Ottawa by Former Municipality

	Acres of Soil Class 1, 2, 3 (Area of Class 1, 2, 3 as percentage of total land area by census subdivision)
New City of Ottawa	351,117 (51.51%)
Osgoode	62,387 (66.05%)
Cumberland	55,205 (70.21%)
Gloucester	63,025 (62.24%)
Nepean	34,225 (63.85%)
Rideau	40,109 (39.63%)
Goulbourn	24,638 (35.77%)
Kanata	8,371 (28.98%)
West Carleton	63,157 (40.83%)

Source: Hoffman and Noble, 1975:37

2.2.2 Land Evaluation and Area Review (LEAR)

While the Canada Land Inventory (CLI) approach to the identification of provincially-significant agricultural lands has been widely adopted across the province, the methodology has been perceived by some as being subjective and qualitative. To assist municipalities with the application of an alternative system, the province of Ontario developed the Land Evaluation and Area Review (LEAR) System.

As part of its recent review of the Regional Official Plan, the Regional Municipality of Ottawa-Carleton attempted to identify its prime agricultural areas by utilizing the LEAR system as the framework for a Regional model. The Region has since completed its Ottawa-Carleton LEAR (OCLEAR) process and have used the results to help identify its Agriculture Resource Area designation in its most recent Regional Official Plan (RMOC Official Plan, 1999).

The OCLEAR system provides a maximum of 200 points for any Evaluation Unit (property holding) with Land Evaluation receiving 70% of the total weight and Area Review with 30% (OMAFRA, 1997 & 1998).

The Land Evaluation (LE) component of the OCLEAR system is based on the CLI capability ratings reviewed in the preceding section. Points are allotted to each classification of soil on a scale of 0 to 10, the better the class - the higher the points received (e.g. Classes 1 and 2 soils receive 10 points, whereas Class 7 and Organic soils receive 0 points). Soil points are then multiplied by 14 for the total weighted LE score.

The Land Area (AR) component of LEAR is based on three separate factors:

- Agricultural Land Use (AG), where a maximum of 10 points can be achieved depending on the percentage of property in agricultural use. The maximum score of 10 points can be attained should greater than 85% of the property be in agricultural use. The score is then multiplied by 3 for the total weighted AG score.

- Fragmentation (FRAG) essentially involves parcel size - the larger the parcel size, the higher the score. A maximum score of 10 points is received if the land is over 36 hectares (90 acres) in size. For the total FRAG score, points are multiplied by 2 for the total weighted FRAG score.

- Adjacent Land Use (AG-NEIGH) factor represents the percentage of property within 305 metres of an incompatible use and is rated on a scale of 10 points. The maximum is received if no portion of the property falls within the 305 metres sphere of influence, the score is then multiplied by 1 for the total weighted AG-NEIGH score.

In completing its land evaluation system, the Region employed the expertise of an Agricultural Advisory Committee to assist in the selection and scaling of factors. The Region's Geographic Information System was implemented to calculate OCLEAR scores and spatially display the resulting information (RMOC, 1997).

Figure 2b shows the agricultural resource areas within the study area that have been identified as possessing good agricultural potential through the LEAR system. The spatial orientation of lands with good agricultural potential closely follows the location of Class 1,2 and 3 soils in the CLI classification system (Figure 2).

2.2.3 Climate and Crop Heat Units

The new City of Ottawa is located in parts of two climatic regions. The majority of the study area is situated in the Eastern Counties climatic region. The remainder, consisting of the northwestern part of the study area is situated in the Renfrew climatic region. Differences between the two regions are evident when comparing statistics such as mean average temperatures (6.1ºC Eastern Counties vs 5ºC Renfrew), frost-free period (135 days vs130 days), growing season (195 days vs 190 days), and mean annual precipitation (762 to 940mm vs 711mm) (Shute & Wilson, 1987: 10). A frost-free period ranging from 130 to 140 days makes commercial production of many vegetable crops possible.

The Crop Heat Unit system (CHU), once referred to as Corn Heat Units, was developed in the 1960's and is used to recommend corn hybrids and soybean varieties which are best suited for production in specific CHU zones in various regions of Canada. There is a wide selection of hybrids and varieties for most crops. Most of the warm-season crops have a wide range of maturities. The CHU ratings are based on the total accumulated CHUs for the frost-free growing season in each area of the province.

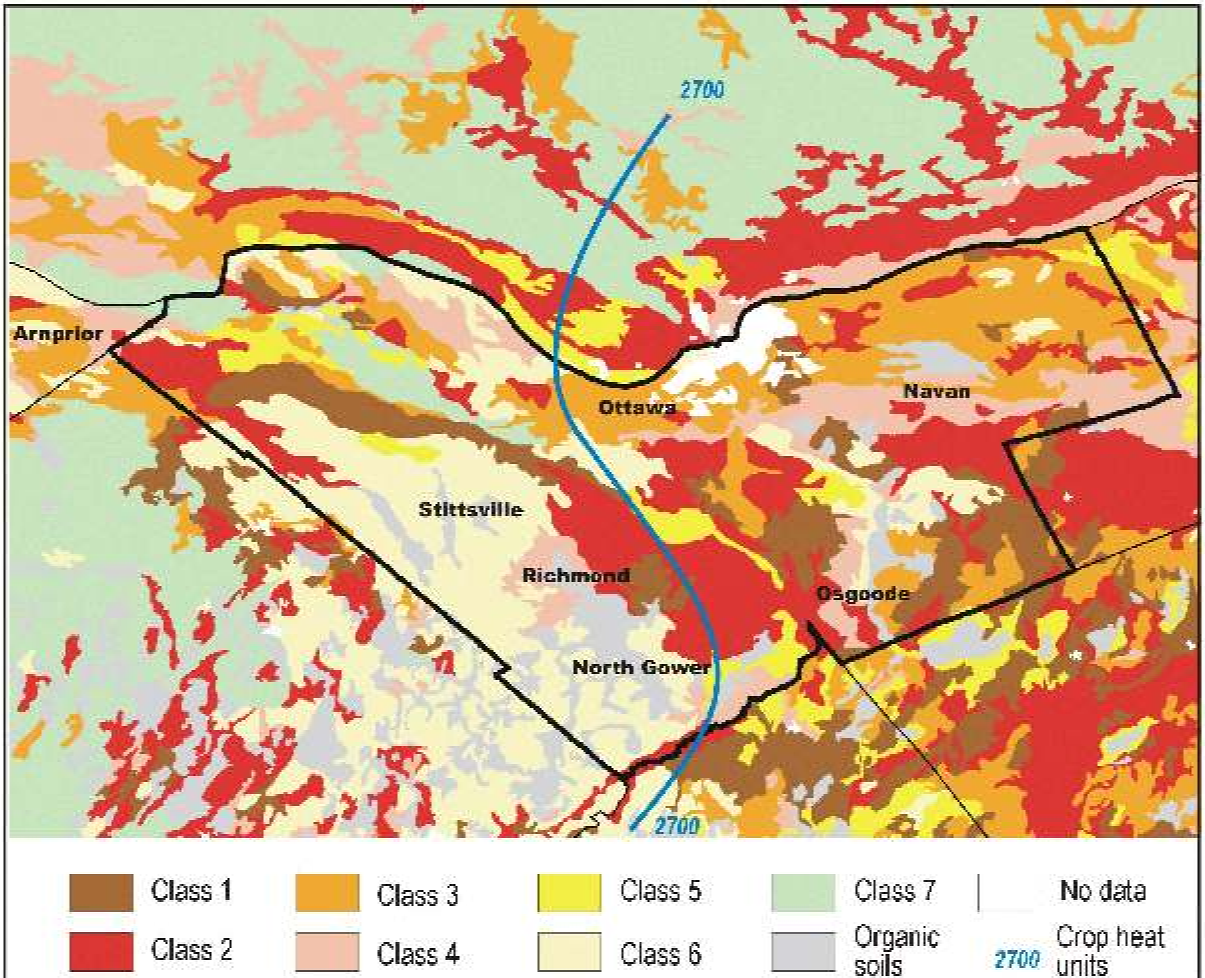
Daily CHU are calculated from daily minimum and maximum air temperatures drawn from separate calculations taken during the day and night. The daytime relationship uses 10 degrees Celsius (50F) as the base temperature and 30 degrees Celsius (86F) as the optimum because warm-season crops do not develop when daytime temperatures fall below 10 degrees Celsius and they develop fastest at about 30 degrees. The nighttime relationship uses 4.4 degrees Celsius (40F) as the base temperature and does not specify an optimum temperature because nighttime temperatures very seldom exceed 25 degrees Celsius in Ontario. Daily CHU are calculated by using the average of the two daily values.

Latitude, elevation and distance to the Great Lakes all affect daily temperatures and have a marked influence on the accumulated CHU across southern Ontario. The change between CHU isolines is gradual. However, the slope and soil type at a site also influence temperature. For example, south-facing slopes receive more heat than north-facing slopes, and sandy soils warm up faster than loam or clay soils. Microclimates also influence specific land situations. This makes it impossible to estimate the CHU rating closer than 50 heat units for any location.

The City of Ottawa is roughly bisected by a 2,700 CHU isoline running north-south. The western part of Ottawa sits in a 2,500 - 2,700 CHU zone while the eastern part sits in a 2,700 - 2,900 CHU zone (Figure 2).

Figure 2

Soil Capability Classes and Crop Heat Units for the New City of Ottawa



- A total of 351,000 acres or 51% of the total land area in the City of Ottawa is classified as suitable for sustained production of common field crops
- Availability of Class 1, 2 and 3 soils in the western portion of the City of Ottawa is more limited due to the Canadian Shield

Soil Classes

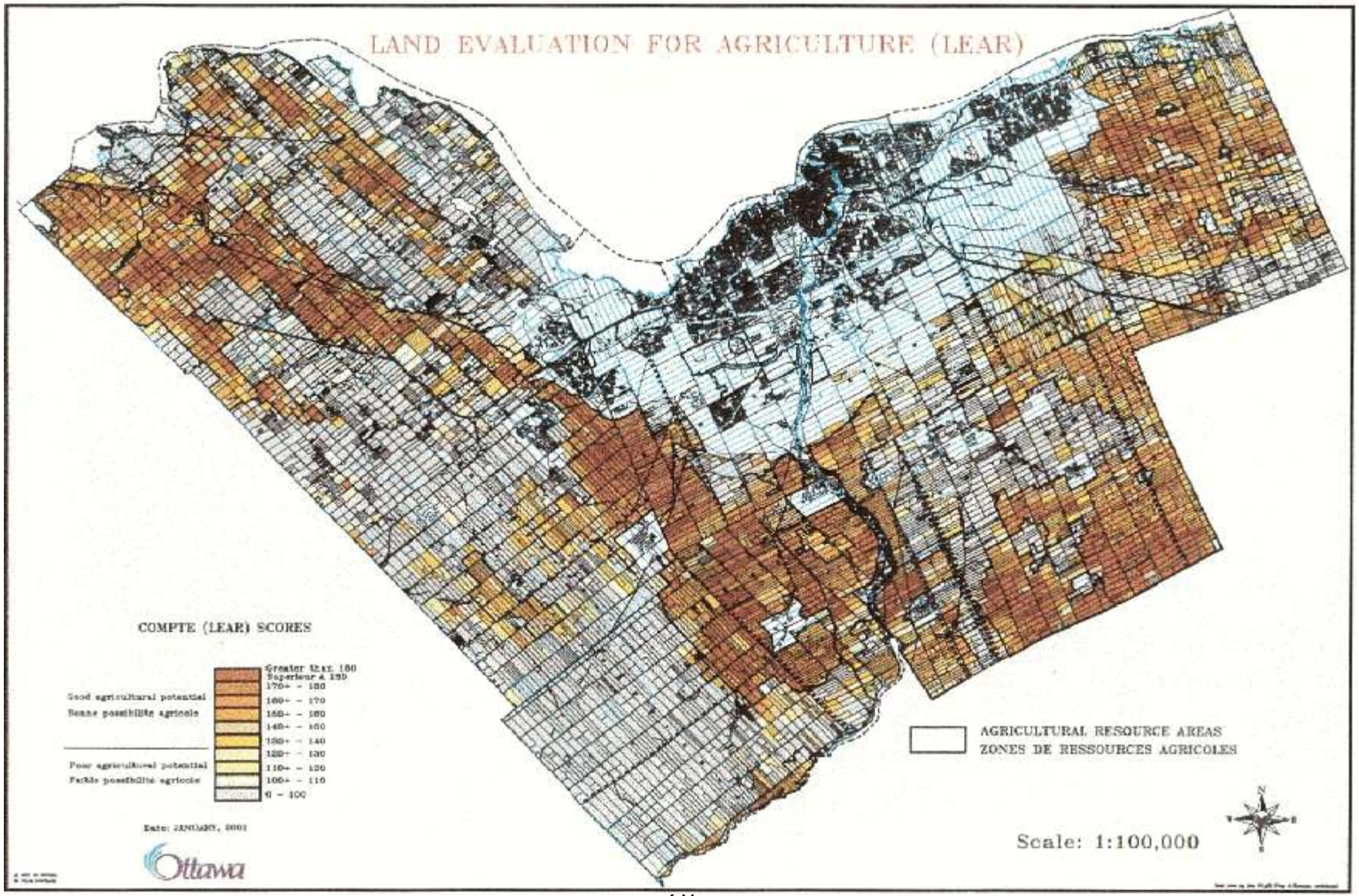
In the Canada Land Inventory (CLI) classification system of land capability for agriculture, mineral soils are grouped into seven classes according to their potential and limitations for agricultural use. Classes 1, 2 and 3 are considered suitable for sustained production of common crops if specified management practices are observed. Soils designated 4 through 6 are increasingly less suited for agriculture. Class 7 soils are generally considered unsuitable for agriculture.

Crop Heat Units

The Crop Heat Unit system (CHU) is an indexing system used to recommend appropriate plant and crop varieties for specific geographic regions of Canada. Calculations for CHU are made based on average daily air temperature and number of available planting days. Latitude, elevation, distance to large bodies of water, slope and soil type, all affect daily temperatures.

Sources: Hoffman & Noble 1975; Brown & Bootsma 1993; http://geogratis.cgdi.gc.ca

Figure 2b
New City of Ottawa - Land Evaluation for Agriculture



2.3 Farmland Use

Approximately 175,000 acres of farmland in the new City of Ottawa were in crops in 1996 (Table 12). This represents 59% of the total farmland area in the study area. Between 1991 and 1996, the area of farmland under crops increased by 2.8% (4,800 acres). This increase is consistent with trends at the regional and provincial level. However, the rate of increase in Ottawa is not as large as that found for the Eastern Ontario agricultural region (3.7%) [1] or for the province of Ontario.

Municipalities in the western part of the study area typically have a lower proportion of their total farmland base in crops (Figure 3). As noted earlier, this is associated with the extension of the Canadian Shield through the western portion of the study area.

Farmland classified as 'other' made up the second largest land use category in the new City of Ottawa in 1996. Eighteen percent of the total farmland base (54,700 acres) was classified as 'other' use in 1996. Christmas tree farms are included in this classification of which there were 32 in the study area in 1996 covering a total of 630 acres.

The new City of Ottawa has more farmland under irrigation than any other census division (county) in Eastern Ontario. In 1996 there were 1,712 acres of irrigated farmland in the study area representing 19.3% of the total farmland base under irrigation in Eastern Ontario. Between 1986 and 1996, the area of farmland under irrigation in the new City of Ottawa increased by 155%.

A substantial portion of the total farmland base in the new City of Ottawa was rented/leased in 1996. Indeed, 29.1% (86,500 acres) of all farmland in the study area was rented/leased in 1996 compared to 26.6% in 1991. While the 1996 figure is comparable to the provincial average of 29.7%, it is somewhat larger than the average for Eastern Ontario, 21%.

Additional details on farmland use in the new City of Ottawa are provided in Section 4.3 of the report.

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[1] Eastern Ontario agricultural region includes the new City of Ottawa, Lanark County, Renfrew County, Frontenac County, Leeds and Grenville United Counties, Lennox and Addington United Counties, Prescott and Russell United Counties, and Stormont, Dundas and Glengarry United Counties.

Table 5. New City of Ottawa Farm Land Use by Municipality, 1996

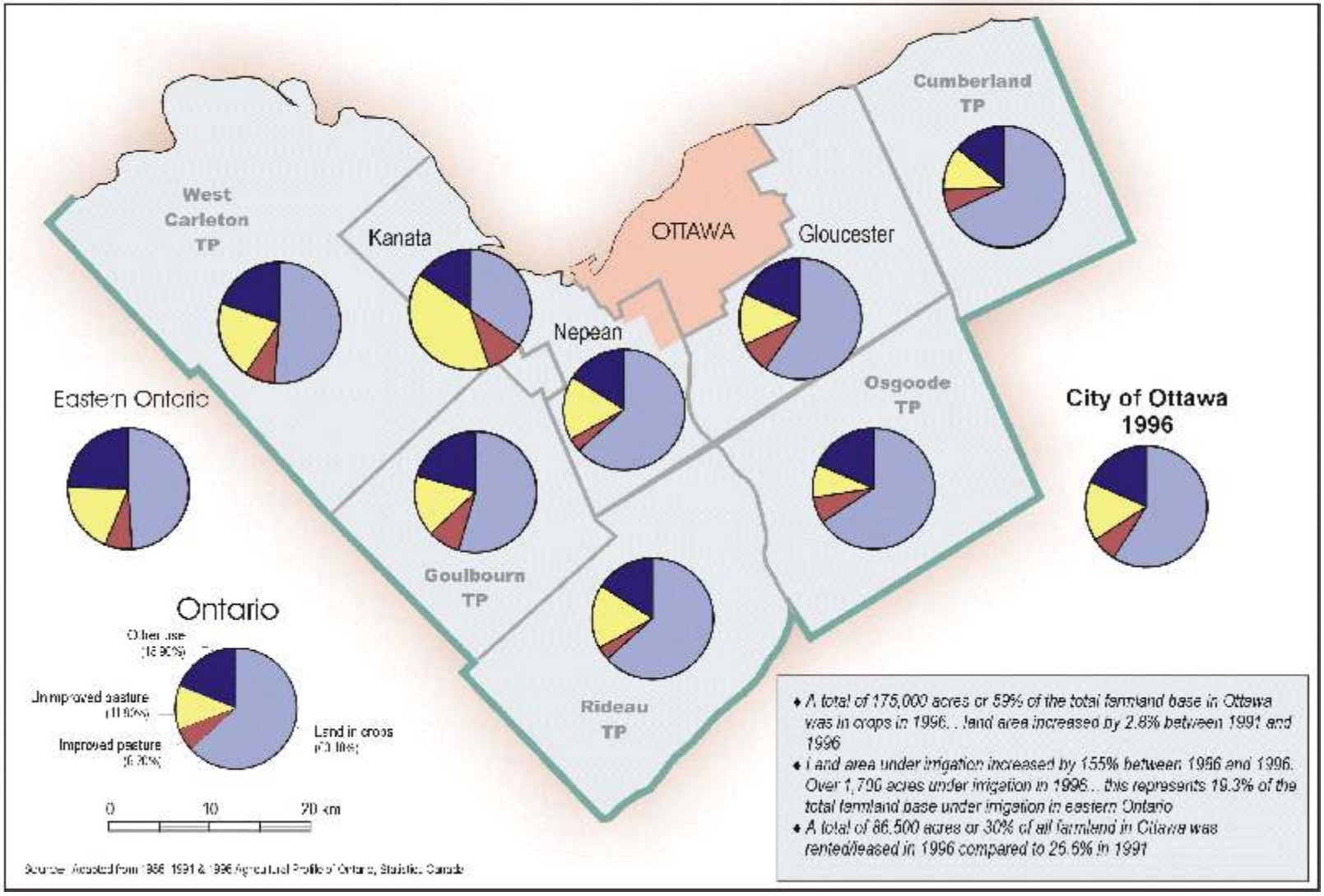
	Number of farms	Total area of farm land (acres)	Land in crops	% in crops	Improved pasture	% improved pasture	Unimproved pasture	% unimproved pasture	Other use (includes X-mas trees)	% other use [a]
Ontario	67,520	13,879,565	8,759,707	63.1%	860,786	6.2%	1,641,692	11.8%	2,617,380	18.9%
Eastern Ontario	10,473	2,500,799	1,227,219	49.1%	180,493	7.2%	474,946	19.0%	618,141	24.7%
New City of Ottawa	1,455	296,807	175,254	59.0%	20,280	6.8%	46,595	15.7%	54,678	18.4%
Osgoode	289	55,538	36,513	65.7%	3,844	6.9%	4,924	8.9%	10,257	18.5%
Cumberland	188	37,723	25,721	68.2%	2,288	6.1%	4,379	11.6%	5,335	14.1%
Gloucester	88	18,957	11,295	59.6%	1,582	8.3%	2,618	13.8%	3,462	18.3%
Nepean	70	25,560	16,171	63.3%	926	3.6%	4,382	17.1%	4,081	16.0%
Rideau	211	43,168	26,502	61.4%	2,130	4.9%	5,899	13.7%	8,637	20.0%
Goulbourn	164	29,941	16,316	54.5%	2,570	8.6%	4,869	16.3%	6,186	20.7%
Kanata	45	8,282	2,910	35.1%	808	9.8%	3,303	39.9%	1,261	15.2%
West Carleton	400	77,638	39,826	51.3%	6,132	7.9%	16,221	20.9%	15,459	19.9%

[a] Land classified as summer fallow is included in the 'other use' category. Summer fallow land represents no more than 1% of the total farm land area in any one municipality.

Source: 1996 Statistics Canada. Agricultural Profile of Ontario.

Figure 3

New City of Ottawa - Farmland Use by Municipality, 1996



Source: Adapted from 1986, 1991 & 1996 Agricultural Profile of Ontario, Statistics Canada

2.4 Farm Types

Between 1986 and 1996 the number of farms in the new City of Ottawa declined by 146. This period saw a shift in farm types in the study area as dairy and beef farms declined in number and field crop and specialty type farms increased (Figure 4).

However, the decline in dairy and beef farms should not be interpreted as a sign that these sectors are fading in the study area. While the total number of dairy farm operations declined by 25% between 1986 and 1996, the number of dairy cows in the new City of Ottawa declined by only 13.6%. During the same period total milk production declined by only 5%. These numbers suggest that dairy herds are becoming larger in the new City of Ottawa as well as more efficient. Additionally, while the total number of beef farms in the new City of Ottawa declined by 35% between 1986 and 1996, the total number of beef cows actually increased by 11.6%.

Dairy farms continue to have a strong presence in Cumberland, Osgoode and Nepean where they account for 25% or more of all farm types. Dairying has also retained a solid presence in Rideau and West Carleton where dairy farms account for 20% of all farm types. In the western part of the study area, beef farms account for 30% or more of all farms in Goulbourn, Kanata and West Carleton.

Vegetable and fruit type farms appear in higher concentrations in Nepean, Gloucester and Cumberland than elsewhere in the study area. A substantial amount of acreage is taken up by vegetable production in the new City of Ottawa relative to other areas of Eastern Ontario. In 1996, the 1,821 acres of local farmland in vegetable production represented 37% of the total farmland in vegetable production in Eastern Ontario.

A few examples highlight the growth associated with the specialty type and field crop type farming operations in the new City of Ottawa. In 1986, 71 farms were growing soybeans over a total acreage of 3,500 acres. By 1996, 269 farms were growing close to 20,000 acres of soybeans. Between 1986 and 1996 land in sod production increased from 1,686 acres to 2,081 acres. The amount of sod produced in the new City of Ottawa in 1996 amounted to 55% of the total area under production in Eastern Ontario and 8.8% of the provincial total. The floriculture industry also experienced significant expansion in the region between 1991 and 1996 (Brown and Murphy, 1999).

The horse industry is an agricultural sector that is often overlooked as an influential factor in the local economy. Recent research into the size and importance of the equine industry in Ontario reveals that the industry has important linkages to other aspects of the agricultural industry as well as to numerous other areas such as trades and real estate. At the provincial level the equine industry employs approximately 80,000 people directly. This estimate includes only hired help, it does not include employees of supporting industries such as feed manufacturers, tack shops and veterinarians. In terms of dollars, estimated total annual expenditures by the Ontario horse industry in 1996 amounted to $567 million (non-racing sector and racehorse industry sector combined) (Wright and Cation, 1996).

The equine industry in new City of Ottawa ranks first among all other counties in Eastern Ontario in terms of annual expenditures and horse numbers. With just over 25% of the total horse population in Eastern Ontario, the local equine industry generates an estimated $18.2 million in annual expenditures (Table 6).

Table 6. Profile of the Equine Industry in Ontario

County/Region	Estimated Number of Farms	Estimated Number of Horses	Annual Economic Impact ($)	Investment in Fixed Assets ($)
Province of Ontario	48,196	293,015	567.0 M	5.5 B
Southern Ontario Region	10,475	69,744	124.2 M	1.3 B
Western Ontario Region	17,410	108,069	192.5 M	2.0 B
Central Ontario Region	9,426	64,061	114.1 M	1.2 B
Northern Ontario Region	2,551	11,532	20.5 M	210.5 M
Eastern Ontario Region	8,334	39,608	70.5 M	722.8 M
New City of Ottawa	1,560	10,218	18.2 M	186.5 M
Stormont, Dundas, & Glengarry Counties	1,295	5,444	9.7 M	99.4 M
Prescott & Russell Counties	768	3,065	5.5 M	55.9 M
Leeds & Grenville Counties	1,396	7,211	12.8 M	131.6 M
Lanark County	893	4,134	7.4 M	75.4 M
Frontenac County	714	3,108	5.5 M	56.7 M
Lennox and Addington County	566	2,539	4.5 M	46.3 M
Renfrew County	1,143	3,888	6.9 M	71.0 M

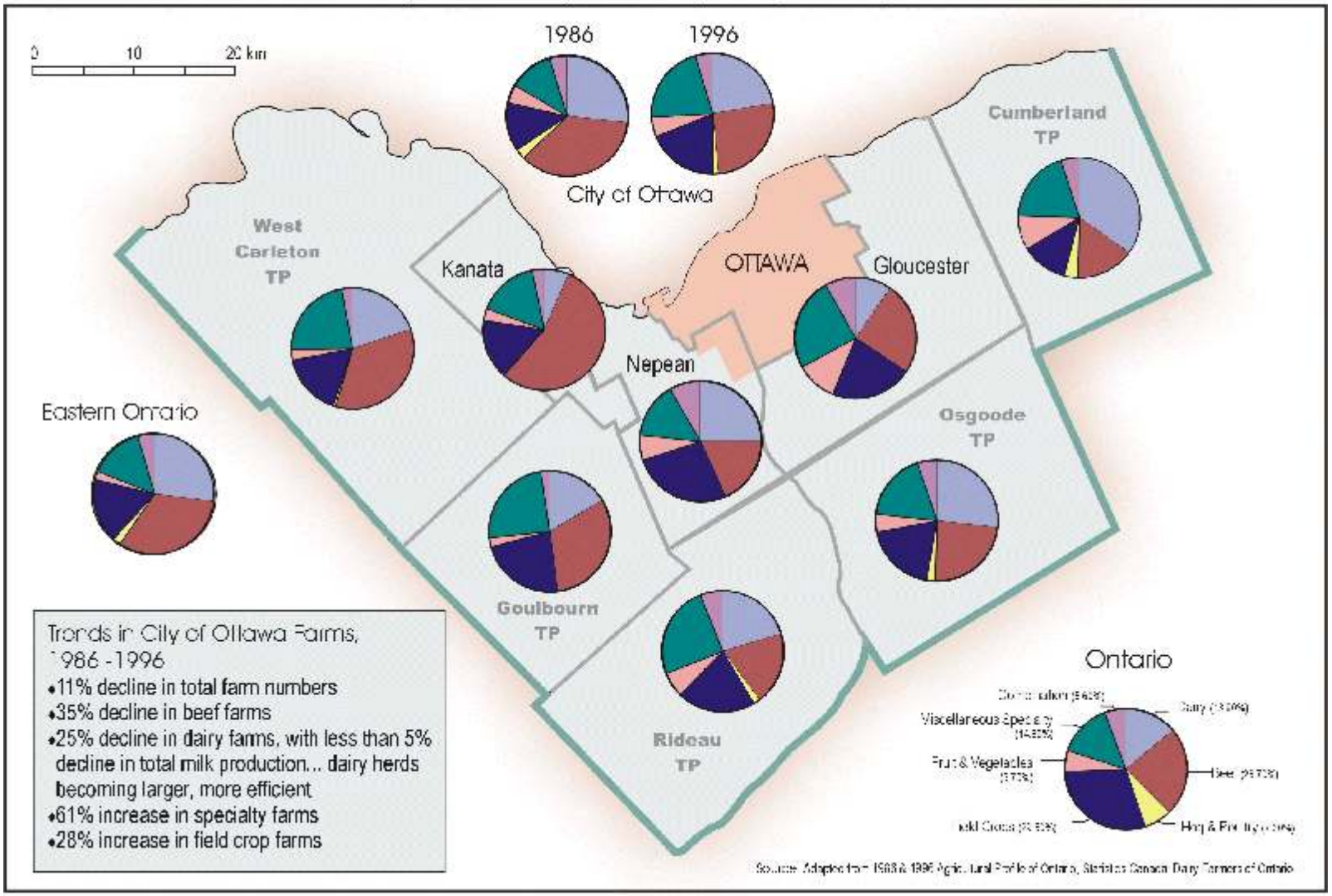
Source: http://www.gov.on.ca/OMAFRA/english/livestock/horses/facts/ecimpact.htm
Economic Impact of the Horse Industry in Ontario, from the horse industry survey 1993-1995, Dr. Robert Wright, Equine Program, OMAFRA.

Additional details on farm types in the new City of Ottawa are presented in Section 4.5.

Figure 4

New City of Ottawa - Farm Types by Municipality, 1996

(Farms with annual gross farm receipts of $2,500 or more)



2.5 Farm Gate Receipts & Farm Operating Expenses

Total farm gates receipts in the new City of Ottawa for 1995 amounted to $136.7 million. This represents approximately 17% of the total farm gates sales reported for all of Eastern Ontario and 2% of the provincial total. As shown in Figure 5, there was some variation between the municipalities in terms of the average value of farm gate sales on a per acre basis. Lower values ranging from $117 to $321 per acre were associated with municipalities in the western part of the study area. Higher values ranging from $380 to $830 per acre were a feature of eastern municipalities. The figure of $837 for Gloucester likely stems from the presence of one or more large farm businesses that have their headquarters based in the area. A more detailed analysis of differences at the municipal level is provided in Section 4.6 of the report.

With an average of $460/acre in farm gate sales, the new City of Ottawa outperformed the average for the Eastern Ontario region ($320/acre) but was somewhat lower than the provincial average ($560).

One of the ways farmers in the Ottawa area are able to maintain direct contact with consumers is through local farmers' markets. The Byward Farmers' Market in Ottawa is one of the largest markets in Ontario with annual sales of $50 million. The Parkdale Farmers' Market and the farmers' market in Carp are also popular venues where area farmers can sell their produce (Cummings, Kora & Murray, 1999).

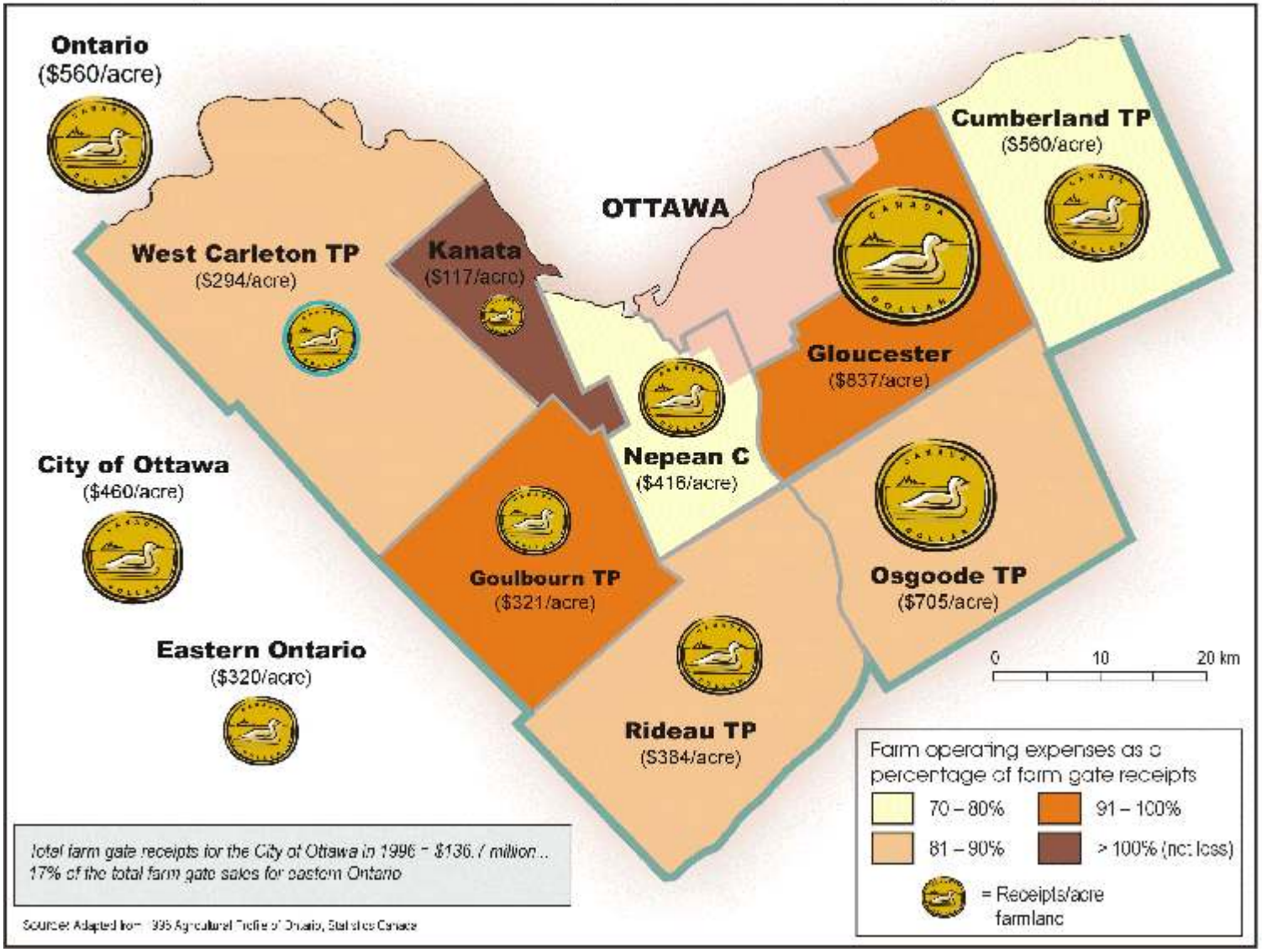
2.6 Summary

Agriculture is a diverse industry in the new City of Ottawa. Figures 3 to 5 provide data on attributes at the census subdivision (CSD) scale that reveal aspects of the diversity that exist across the study area. The contrasts that exist between and among the census subdivisions of the study area are often greater than the contrasts between the study area and the province. Part of the diversity exhibited at the CSD scale is likely a reflection of the local bio-physical diversity.

However, other factors are likely contributing to the level of diversity we observe in the study area. The concentration of certain farms types in a given region and the presence of one or more large scale farm operations may be influencing variation between neighbouring townships. As well, having a large urban centre located in the area enhances the opportunities for market gardening operations as well as specialty farm operations such as mushroom and sod production.

Figure 5

New City of Ottawa Farm Gate Receipts and Farm Operating Expenses, 1995



3.0 Population and Employment in the New City of Ottawa

3.1 Introduction

This section of the report profiles changes in population and employment in the new City of Ottawa. For the purpose of this analysis, the municipalities associated with the former Regional Municipality of Ottawa-Carleton will be used. As such, the new City of Ottawa includes the following municipalities: the Cities of Gloucester, Vanier, Nepean, Ottawa and Kanata, the Townships of Osgoode, Cumberland, Rideau, Goulbourn and West Carleton, and the Village of Rockcliffe Park.

3.2 Population and Population Change

Between 1991 and 1996, the population of the region encompassing the new City of Ottawa increased from 678,147 to 721,136. This represents a 6.3% increase, which is slightly above the pace of growth experienced in the Eastern Ontario region [2] (Table 7). Looking at the municipalities within the study area, the Village of Rockcliffe Park and the City of Vanier experienced decreased populations from 1991 to 1996 (-5.6% and -5.0% respectively) while the City of Kanata and Township of Goulbourn recording the highest growth rates in the study area (28.3% and 19.3% respectively). In 1996, the 'former' City of Ottawa made up approximately 45% of the total population of the Region of Ottawa-Carleton.

Table 7. Population and Percent Change for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1991 - 1996

Region	1991	1996	Percent Change
Ontario	10,084,885	10,753,573	6.63%
Eastern Ontario	1,256,226	1,334,371	6.22%
New City of Ottawa	678,147	721,136	6.3%
Osgoode	13,976	15,904	13.8%
Cumberland	40,697	47,367	16.4%
Gloucester	101,677	104,022	2.3%
Vanier	18,150	17,247	-5.0%
Rockcliffe Park	2,113	1,995	-5.6%
Nepean	107,627	115,100	6.9%
Ottawa	313,987	323,340	3.0%
Rideau	11,778	12,444	5.7%
Goulbourn	16,151	19,267	19.3%
Kanata	37,344	47,909	28.3%
West Carleton	14,647	16,541	12.9%

[2] Eastern Ontario Region includes: the new City of Ottawa, Lanark County, Renfrew County, Frontenac County, Leeds and Grenville United Counties, Lennox and Addington County, Prescott and Russell United Counties and Stormont, Dundas and Glengarry United Counties.

Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions & 1991 Profile of Census Divisions and Subdivisions - Part B.

3.3 Family Income Distribution

A comparison of family income distribution in the new City of Ottawa relative to Eastern Ontario, Ontario and Canada is provided in Tables 8 and 9. In 1991 and 1996, the City of Ottawa had relatively fewer family numbers in the two lowest income groups compared to Eastern Ontario, Ontario and Canada. In 1996, 11.5% of families in the study area had incomes of less than $20,000 per year. This is lower than the corresponding numbers for Eastern Ontario (12.7%), Ontario (13.8%) and Canada (15.7%).

With respect to the higher income categories, the study area performed better than Eastern Ontario, Ontario and Canada. In 1996, 40.5% of families in the study area had an annual income of $70,000 or more. The corresponding proportions for Ontario and Canada were 30.9% and 25.7% respectively. The Eastern Ontario region exceeded both the national and provincial figure with 32.2% of families in the region earning $70,000 or more annually. The new City of Ottawa experienced an increase in the proportion of families earning incomes of $70,000 or more between 1991 and 1996. This was consistent with the general pattern across Eastern Ontario, Ontario and Canada.

Table 8. Family Income Distribution for Canada and Ontario, 1991 - 1996

Family Income Categories	Canada				Ontario			
	1991		1996		1991		1996	
	Number of families	% of total	Number of families	% of total	Number of families	% of total	Number of families	% of total
Under $10,000	367,460	5.00%	435,760	5.56%	119,990	4.40%	148,050	5.05%
$10,000 - $19,999	793,465	10.79%	795,895	10.15%	224,535	8.23%	256,625	8.75%
$20,000 - $29,999	955,870	12.99%	1,007,840	12.86%	301,000	11.04%	332,130	11.32%
$30,000 - $39,999	1,043,170	14.18%	992,020	12.66%	344,810	12.65%	336,440	11.47%
$40,000 - $49,999	1,028,100	13.98%	968,900	12.36%	368,185	13.50%	340,330	11.60%
$50,000 - $59,999	906,130	12.32%	883,520	11.27%	348,825	12.79%	324,365	11.06%
$60,000 - $69,999	692,940	9.42%	736,990	9.40%	288,045	10.56%	289,155	9.86%
$70,000 and over (1991)	1,568,585	21.32%	568,055	7.25%	731,230	26.82%	235,015	8.01%
$70,000 - $79,000 (1996)								
$80,000 - $89,999			416,740	5.32%			179,905	6.13%
$90,000 - $99,999			286,875	3.66%			127,950	4.36%
$100,000 and over			745,265	9.51%			362,765	12.37%
Total families	7,355,720		7,837,860		2,726,620		2,932,730	
Average income, family ($)	51,342		54,583		57,227		59,830	
Median income, family ($)	44,848		46,951		50,046		51,520	

Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions & 1991 Profile of Census Divisions and Subdivisions - Part B.

Table 9. Family Income Distribution for Eastern Ontario and the New City of Ottawa, 1991 - 1996

	Eastern Ontario				New City of Ottawa			
	1991		1996		1991		1996	
	Number of families	% of total	Number of families	% of total	Number of families	% of total	Number of families	% of total
Under $10,000	13,035	3.84%	13,910	3.84%	6,740	3.78%	7,195	3.78%
$10,000 - $19,999	28,440	8.38%	31,930	8.81%	11,250	6.31%	14,640	7.69%
$20,000 - $29,999	35,910	10.59%	39,200	10.81%	13,985	7.84%	16,060	8.44%
$30,000 - $39,999	42,155	12.43%	40,315	11.12%	17,450	9.79%	17,300	9.09%
$40,000 - $49,999	44,890	13.23%	42,565	11.74%	20,455	11.47%	19,060	10.02%
$50,000 - $59,999	42,170	12.43%	41,325	11.40%	21,545	12.08%	20,190	10.61%
$60,000 - $69,999	35,990	10.61%	36,675	10.12%	20,345	11.41%	18,895	9.93%
$70,000 and over (1991)	96,615	28.48%	29,400	8.11%	66,535	37.32%	16,830	8.85%
$70,000 - $79,000 (1996)								
$80,000 - $89,999			23,280	6.42%			14,720	7.74%
$90,000 - $99,999			16,585	4.58%			10,705	5.63%
$100,000 and over			47,370	13.07%			34,680	18.23%
Total families	339,205		362,475		178,305		190,265	100.00%
Average income, family ($)					64,815		67,871	
Median income, family ($)					58,863		60,190	

Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions & 1991 Profile of Census Divisions and Subdivisions - Part B.

3.4 Employment and Employment Change

In 1996 the economy of the study area supported 382,145 employed residents, 7,995 fewer than it supported in 1991 (Table 10). In terms of its contribution to the economy of Eastern Ontario and the province, the study area accounts for 56% of all jobs in the region and 7% of the jobs in Ontario. As illustrated in Table 9, government service is the largest employer, with almost 73,000 jobs in the study area in 1996[3]. This is followed by business service (44,070 jobs) and retail trade (40,910 jobs) sectors.

In terms of single employers, the major employer in the new City of Ottawa in 1996 was the Government of Canada, with almost 73,000 employees. Using more recent figures, Nortel Networks, the advanced technology business, is the next leading employer with over 14,000 employees. JDS Uniphase, another advanced technology business located in the area, provides over 8,000 jobs. Canada Post Corporation, University of Ottawa, Ottawa-Carleton District School Board, Ottawa Hospital and Carleton University

[3] The SIC divisions refer to the Standard Industrial Classification (1980) system which categorizes the Canadian economy into different productive (industrial) categories or classifications. At the greatest level of aggregation the economy is divided into 18 divisions.

each have approximately 4,500 employees. Employers with between 2,501 and 4,000 employees include Bell Canada (telecommunications), Alcatel Canada (advanced technology), Loblaws (food retail), the Region of Ottawa-Carleton (municipal government) and the Ottawa Carleton Roman Catholic School Board (education sector).

Employment in manufacturing in 1996 accounted for almost 7% of the total jobs in the study area. The study area had a lower proportion of its total workforce in manufacturing compared to the Eastern Ontario region as a whole (10%) as well as the province, where manufacturing jobs account for 17% of the workforce (Table 10).

Manufacturing was a 'growth' sector for the study area between 1991 and 1996 generating an additional 4,505 jobs. It is important to note that this growth occurred during a period when Ontario lost over 20,000 jobs in the manufacturing sector (Table 11 and Figure 6a). In fact, the new City of Ottawa is a leader in the Eastern Ontario region, having experienced a greater rate of job creation in manufacturing at 20.28% than was achieved by Eastern Ontario as a whole (7.85%) between 1991 and 1996 (Table 10 and Figure 6a).

The new City of Ottawa has emerged as a centre of high-tech employment. According to the latest count by the Ottawa-Carleton Economic Development Corporation (OCEDCO), there are now over 47,000 high-tech jobs in Ottawa-Carleton and almost 800 firms. It's expected that employment growth in this sector may meet or exceed that of the federal government by 2001.

In 1996, the retail sector accounted for the third largest share of employment in the study area. At 10.71%, the proportion of employment in retail in the study area was slightly lower than in the Eastern Ontario region and Ontario, where retail jobs accounted for 11.72% and 12.27% respectively (Table 9).

Retail was a declining sector for the study area between 1991 and 1996. The loss of 3,095 jobs in retail represented a 7.03% decrease. This mirrors the situation at the regional (Eastern Ontario) and provincial (Ontario) levels (Table 10 and Figure 6a).

The business sector in the new City of Ottawa is the second largest sector employer, with 44,070 jobs, or almost 12% of the total workforce in the area. This is a larger share than both the Eastern Ontario and provincial levels, which were reported as 8.73% and 7.61% (Table 9). The business services sector is a growing industry in the study area, with an increase of over 5,000 jobs from 1991 to 1996. This increase represents a percentage change of 13.45%. This growth rate is higher than both Eastern Ontario (12.33%) and Ontario (11.95%) and can be largely attributed to the local computer software industry (Table 10 and Figure 6b).

The health and social services sector accounted for almost 10% of the total workforce in the study area in 1996. The study area had a slightly lower proportion of its

total workforce in health and social services than was found in the economies of Eastern Ontario (10.37%) and Ontario (9.51%) (Table 9).

The creation of 3,070 jobs in this sector between 1991 and 1996 represents an increase of 9.17% for the new City of Ottawa. This is similar to the Eastern Ontario rate of 9.01%, while lower than the provincial rate of 12.36% (Table 10 and Figure 6b). All three areas had increased employment in the health and services sector from 1991 to 1996.

At 72,960 jobs, the largest employer in the new City of Ottawa, which includes the nation's capital, is the government services sector. The new City of Ottawa supports a greater proportion of government service sector jobs than the provincial economy. While government service sector jobs accounted for 5.64% of all jobs in the provincial economy, close to 20% of all jobs in the study area were in the government services sector in 1996 (Table 10).

While government services sector is the largest employer in the new City of Ottawa, it is not a growth industry. Employment in this sector suffered a large setback between 1991 and 1996 with the loss of 21,480 jobs, representing a 22.74% decline. The rate of government job losses associated with the economies of the Eastern Ontario region and Ontario between 1991 and 1996 were also severe at -20.97% and -25.96% respectively (Table 11 and Figure 6b).

The new City of Ottawa supports a greater proportion of education service sector jobs than the provincial economy. Employment in education services accounted for 7.70% of the total workforce in the study area in 1996 compared to a figure of 6.84% for Ontario. The study area also recorded a similar proportion of jobs in education services with the Eastern Ontario region (7.78%) (Table 10).

Over 550 jobs in the education service sector were lost in the study area between 1991 and 1996. The new City of Ottawa's negative growth rate of -1.85% in this sector can be compared to positive growth rates in the Eastern Ontario region (1.26%) and Ontario (1.12%) (Table 11 and Figure 6b).

As a combined category, the public service sector (government, education and health and social services) is a key component of the local economy. This category accounts for 138,950 jobs, or 37% of total employment in the study area.

The "other service' sector includes: Amusement and Recreational Service Industries, Personal and Household Service Industries, Membership Organization Industries, and Other Service Industries. "Other Service Industries" includes machinery and equipment rental and leasing services; automobile and truck rental and leasing services; photographers; other repair services; services to buildings and dwellings; travel services. Services relevant to agriculture in the 'other service" category include machinery and

equipment rental and leasing, welding shops that repair farm equipment and auctioneers providing services for livestock and farm equipment owners.

The "other service industries" accounted for 32,545 jobs in the new City of Ottawa in 1996. At 8.52% of the total workforce, employment in this sector is proportionally higher than in Eastern Ontario (7.80%) and Ontario (7.68%) (Table 10). This sector experienced the highest growth compared with all other sectors in the new City of Ottawa, with an additional 7,455 jobs from 1991 to 1996. This represents a rate of growth of almost 30%, compared with growth rates of 24% and 17% for Eastern Ontario and Ontario respectively (Table 11 and Figure 6b).

Agriculture directly supported 3,510 jobs in the new City of Ottawa in 1996.[4] Employment in agriculture is proportionally lower in the City of Ottawa region (0.92%) than in the Eastern Ontario region (2.48%) and Ontario (2.43%). This low value is a reflection of the magnitude of the public service sector in the county (Table 10).

The new City of Ottawa lost 215 agriculture jobs between 1991 and 1996, which represents a decline of 5.77%. However, job losses in agriculture recorded at the provincial level were more severe, with a decline of 6.31%. This translates into a loss of over 8,800 agriculture jobs in Ontario between 1991 and 1996 (Table 11, Figure 6a).

In summary, the new City of Ottawa's economy as measured by employment figures from the 1996 Census is dominated by the government services sector. Almost twenty percent of the jobs in the area are attributed to the government sector (Figure 6b). The presence of large government as well as education, health and social service institutions, contributes to the overall dominance of the service sector in the local economy. Service sector jobs, including business service, government service, education, health and social service, as well as other service industries, accounted for 92% of all jobs in the study area in 1996 while the proportion for the Ontario economy was 80%. Conversely, the study area has a lower proportion of jobs in the goods producing sector[5] than the province.

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[4] Agriculture employment figures are derived from the Statistics Canada Population Census, Labour Market Activities: Industry. The 1991 and 1996 industry data are produced according to the 1980 Standard Industrial Classification. This classification consists of a systematic and comprehensive arrangement of industries structured into 18 Divisions, 75 Major Groups and 296 Groups. These industrial groups are based on the general nature of the establishment's business, industry or service. Employment figures for agriculture are taken from Division D - Agricultural and Related Service Industries. The available data reports on the population 15 years of age and over, excluding institutional residents. If the person did not have a job during the week prior to enumeration, data relate to the job of longest duration during the year prior to the census.

[5] Goods producing sector includes the following SIC categories: Agriculture and related service industries, Fishing and trapping industries, Logging and forestry industries, Mining industries, and Manufacturing industries.

Table 10. Employment by Standard Industrial Classification Divisions (SIC 1980)[a] for the New City of Ottawa, Eastern Ontario [b], & Ontario, 1996

Industrial Sector Description	New City of Ottawa		Eastern Ontario		Ontario	
	Number of Jobs	Percent	Number of Jobs	Percent	Number of Jobs	Percent
Agricultural and related services	3,510	0.92%	16,810	2.48%	131,060	2.43%
Fishing and trapping	30	0.01%	75	0.01%	1,915	0.04%
Logging and forestry	220	0.06%	1,295	0.19%	11,405	0.21%
Mining (incl. milling), quarrying & oil	195	0.05%	655	0.10%	26,050	0.48%
Manufacturing	26,720	6.99%	68,935	10.15%	922,565	17.08%
Construction	15,955	4.18%	35,440	5.22%	290,430	5.38%
Transportation and storage	10,745	2.81%	21,545	3.17%	198,555	3.68%
Communication and other utility	12,960	3.39%	20,430	3.01%	173,040	3.20%
Wholesale trade	12,440	3.26%	23,295	3.43%	278,220	5.15%
Retail trade	40,910	10.71%	79,610	11.72%	662,815	12.27%
Finance and insurance	11,350	2.97%	17,400	2.56%	228,880	4.24%
Real estate and insurance	7,895	2.07%	12,155	1.79%	111,890	2.07%
Business service industries	44,070	11.53%	59,265	8.73%	411,070	7.61%
Government service industries	72,960	19.09%	101,650	14.97%	304,640	5.64%
Educational service industries	29,430	7.70%	52,830	7.78%	369,320	6.84%
Health and social service industries	36,555	9.57%	70,380	10.37%	513,615	9.51%
Accommodation, food and beverage	23,650	6.19%	44,305	6.52%	350,945	6.50%
Other service industries	32,545	8.52%	52,930	7.80%	414,980	7.68%
Total All Divisions	382,145	100.00%	679,005	100.00%	5,401,395	100.00%

[a] The SIC divisions refer to the Standard Industrial Classification (1980) system which categorizes the Canadian economy into different productive (industrial) categories or classifications. At the greatest level of aggregation the economy is divided into 18 divisions.

[b] Eastern Ontario Region includes: Frontenac County, Lanark County, Leeds and Grenville United Counties, Lennox and Addington County, the City of Ottawa, otherwise known as the Ottawa-Carleton Regional Municipality, Prescott and Russell United Counties, Renfrew County, and Stormont, Dundas and Glengarry United Counties.
Source: Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions.

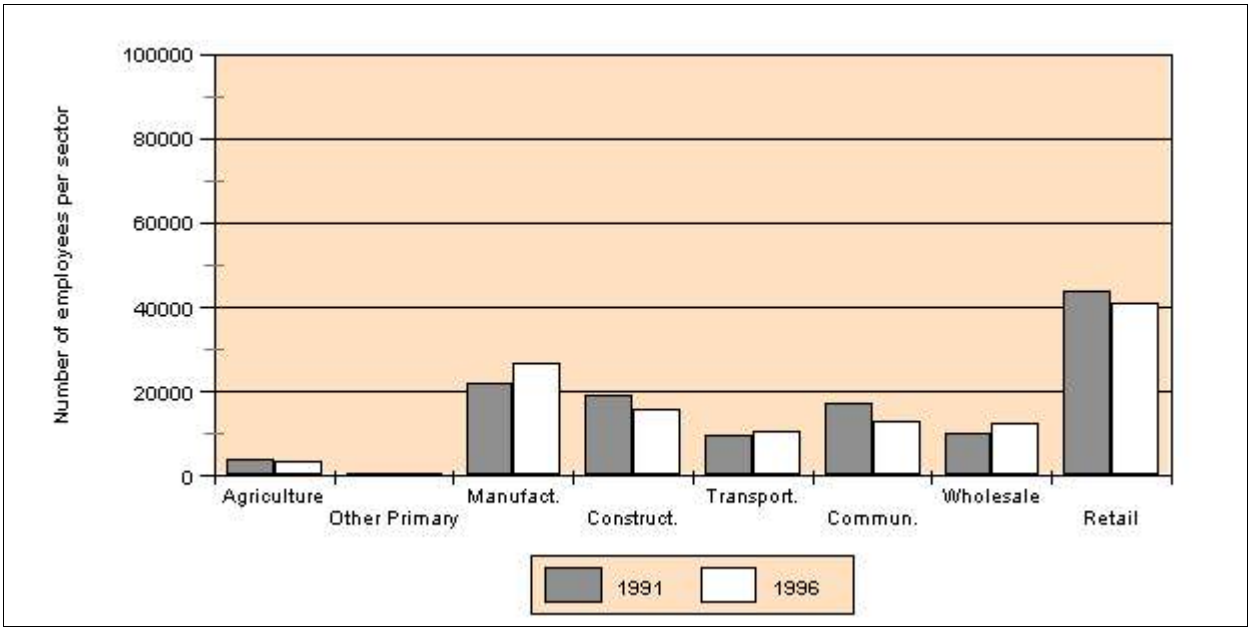
The economy of the new City of Ottawa experienced an overall decline in jobs between 1991 and 1996. The loss was more extensive relative to the proportion of job losses experienced in the Eastern Ontario region and the province of Ontario. While the study area experienced a job decline of 2.1% between 1991 and 1996, the Eastern Ontario region and the province recorded job loss rates of 0.8% and 0.6% respectively. This is due to the large job losses in the important sector of government in the new City of Ottawa (21,480 government jobs were lost between 1991 and 1996).

The growth sectors of the economy in terms of jobs from 1991 to 1996 were the "other services sector", wholesale trade, real estate and insurance and manufacturing. The growth of manufacturing, in particular, is notable because it occurred at a time when the provincial economy experienced job losses in this sector. The new City of Ottawa's economy is continuing to evolve from the government image of the 1960s to a more balanced mix featuring high-technology. Furthermore, while other services, wholesale trade and real estate and insurance industries in the province increased as they did in the study

area, the new City of Ottawa experienced a higher rate of growth compared to the province.

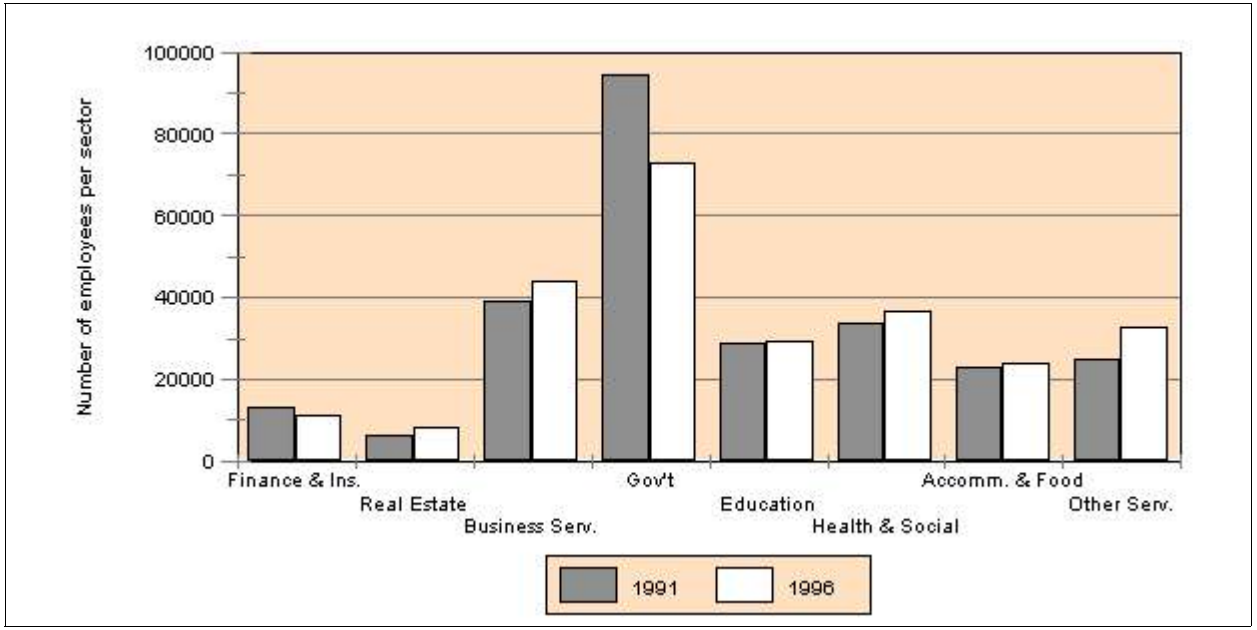
Agriculture in the study area did not experience the types of employment fluctuations that occurred in other sectors but rather maintained a degree of stability between 1991 and 1996. (Section 4 provides more detail on agriculture in the area.)

Figure 6a. Employment by Industrial Sector [a] for the New City of Ottawa, 1991 and 1996



[a] "Other Primary" industries include fishing and trapping, logging and forestry, and mining industries.
Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions & 1991 Profile of Census Divisions and Subdivisions - Part B.

Figure 6b. Employment by Industrial Sector for the New City of Ottawa, 1991 and 1996



Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivision & 1991 Profile of Census Divisions and Subdivisions - Part B.

Table 11. Employment and Employment Change by Standard Industrial Classification Divisions (SIC 1980)[a] for the New City of Ottawa, Eastern Ontario [b], and Ontario, 1991-1996

	New City of Ottawa				Eastern Ontario				Ontario			
SIC Industrial Sector Description	**1991**	**1996**	**Total change**	**% Change**	**1991**	**1996**	**Total change**	**% Change**	**1991**	**1996**	**Total change**	**% Change**
Agricultural and related services	3,725	3,510	-215	-5.77%	17,630	16,810	-820	-4.65%	139,880	131,060	-8820	-6.31%
Fishing and trapping	30	30	0	0.00%	115	75	-40	-34.78%	1,965	1,915	-50	-2.54%
Logging and forestry	455	220	-235	-51.65%	1,560	1,295	-265	-16.99%	13,965	11,405	-2560	-18.33%
Mining (incl. milling), quarrying, oil	260	195	-65	-25.00%	970	655	-315	-32.47%	34,355	26,050	-8305	-24.17%
Manufacturing	22,215	26,720	4,505	20.28%	63,920	68,935	5015	7.85%	942,995	922,565	-20430	-2.17%
Construction	19,315	15,955	-3,360	-17.40%	41,770	35,440	-6330	-15.15%	358,890	290,430	-68460	-19.08%
Transportation and storage	9,785	10,745	960	9.81%	20,155	21,545	1390	6.90%	187,830	198,555	10725	5.71%
Communication and other utility	17,045	12,960	-4,085	-23.97%	25,335	20,430	-4905	-19.36%	188,630	173,040	-15590	-8.26%
Wholesale trade	10,045	12,440	2,395	23.84%	19,300	23,295	3995	20.70%	233,915	278,220	44305	18.94%
Retail trade	44,005	40,910	-3,095	-7.03%	82,370	79,610	-2760	-3.35%	700,925	662,815	-38110	-5.44%

Finance and insurance	13,305	11,350	-1,955	-14.69%	20,520	17,400	-3120	-15.20%	253,135
Real estate and insurance	6,380	7,895	1,515	23.75%	9,835	12,155	2320	23.59%	100,090
Business service	38,845	44,070	5,225	13.45%	52,760	59,265	6505	12.33%	367,200
Government service	94,440	72,960	-21,480	-22.74%	128,630	101,650	-26980	-20.97%	411,450
Educational service	28,985	29,430	-555	-1.85%	52,175	52,830	655	1.26%	365,235
Health and social service	33,490	36,560	3,070	9.17%	64,560	70,380	5820	9.01%	457,115
Accommodation, food & beverage	22,735	23,655	920	4.05%	40,475	44,305	3830	9.46%	322,955
Other service industries	25,090	32,545	7,455	29.71%	42,695	52,930	10235	23.97%	355,310
Total all divisions	390,140	382,145	-7,995	-2.05%	684,775	679,005	-5770	-0.84%	5,435,840

[a] 'Accommodation, food and beverage' category includes: *Accommodation Service Industries* (Hotels, motels and tourist courts; Lodging houses & residential clubs; Camping grounds and travel trailer parks; Recreation and vacation camps) and *Food and Beverage Service Industries* (Food services; Taverns, bars and nightclubs). 'Other service' category includes: *Amusement and Recreational Service Industries, Personal and Household Service Industries, Membership Organization Industries*, and *Other Service Industries* (Machinery and equipment rental and leasing services; Automobile and truck rental and leasing services; Photographers; Other repair services; Services to buildings and dwellings; Travel services). Services relevant to agriculture in the 'other service" category include machinery and equipment rental and leasing, welding shops that repair farm equipment and auctioneers providing services for livestock and farm equipment owners.

[b] Eastern Ontario Region includes: Frontenac County, Lanark County, Leeds and Grenville United Counties, Lennox and Addington County, the City of Ottawa, otherwise known as the Ottawa-Carleton Regional Municipality, Prescott and Russell United Counties, Renfrew County, and Stormont, Dundas and Glengarry United Counties.

Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions & 1991 Profile of Census Divisions and Subdivisions - Part B.

3.5 Summary

The 1996 Census shows the new City of Ottawa with a population of 721,000. As part of the National Capital Region (NCR) the new City of Ottawa represents the fourth largest metropolitan area in Canada with a population surpassing 1,000,000. The new City of Ottawa is a relatively wealthy area, with 40% of families having an annual income of $70,000 or more per year. This corresponds with the provincial figure of 31%. In terms of employment, the region is dominated by the government services sector, although this is a declining sector of the economy, both in the City of Ottawa and Ontario as a whole. Overall, the economy of the region experienced a decline in jobs from 1991 to 1996, which can mostly be attributed to the decline in the government sector. The job 'growth' sectors of the economy include wholesale trade, real estate and insurance, the "other services sector", and manufacturing. A stand out feature of the local economy is the growing high-tech sector which currently supports an estimated 47,000 jobs.

Agriculture did not experience the types of employment fluctuations that occurred in other sectors of the economy, but rather remained relatively stable between 1991 and 1996. The new City of Ottawa is the leading area in Eastern Ontario in terms of agricultural jobs. With 3,510 jobs in agriculture, the City of Ottawa provides more jobs than the Counties of Lanark, Renfrew, Frontenac, Leeds and Grenville United Counties, Lennox and Addington, Prescott and Russell United Counties, as well as Dundas and Glengarry United Counties. While the percentage of jobs lost from 1991 to 1996 (-5.77%) shows a decrease, the lost was not as great as the Eastern Ontario region as a whole (13.16%) (Table 12).

Table 12. Employment and Employment Change in Agriculture and Related Services for Municipalities within Eastern Ontario, Eastern Ontario Total and Ontario, 1991 and 1996

	Ag & Ag Related Jobs 1991	Ag & Ag Related Jobs 1996	Total Change	%Change
New City of Ottawa	3,725	3,510	-215	-5.77%
Lanark	1,220	1,200	-20	-1.64%
Renfrew	1,830	1,810	-20	-1.09%
Frontenac	1,070	1,090	20	1.87%
Leeds	1,480	1,380	-100	-6.76%
Grenville	875	935	60	6.86%
Lennox & Addington	970	920	-50	-5.15%
Prescott	1,545	1,681	136	8.80%
Russell	815	760	-55	-6.75%
Stormont	1,230	910	-320	-26.02%
Dundas	1,525	1,420	-105	-6.89%
Glengarry	1,330	1,155	-175	-13.16%
Eastern Ontario	17,630	16,810	-820	-4.65%
Ontario	139,880	131,060	-8820	-6.31%

Source: Statistics Canada, 1996 Profile of Census Divisions and Subdivisions & 1991 Profile of Census Divisions and Subdivisions - Part B.

4.0 Agriculture in the New City of Ottawa

4.1 Introduction

As noted earlier, a substantial area of land in the new City of Ottawa is classified as having good agricultural potential. While some parts of the region come under the influence of the Canadian Shield, agriculture is not limited to the same extent as in other regions of Eastern Ontario where the Shield is much more predominant. In the counties of Lanark and Renfrew where the Shield extends over large areas of the land base, less than 15% of the soils are classified as 1,2 or 3. In contrast, 52% of the soils in the new City of Ottawa are classified as 1, 2 or 3. The greater abundance of good agricultural resource areas is reflected in the size and diversity of the local agricultural industry.

4.2 Number of Farms

The total number of farms[6] in the new City of Ottawa in 1996 was 1,492 compared to 1,606 farms in 1991. The decline in farm numbers during this period represents a -7.6% decrease. At the same time, the Eastern Ontario region experienced a 1.7% decline in farm numbers while Ontario experienced a 1.6% decline in farm numbers (Table 13). The decline in farm numbers can be viewed as part of a long term trend. Between 1976 and 1996, farm numbers decreased by approximately 25%. However, during the same 20 year period the new City of Ottawa maintained a 14% share of all farms in the Eastern Ontario region (Ottawa Carleton Planning Department, November 1998).

In 1996, West Carleton was the municipality with the largest number of farms (400) in the new City of Ottawa followed by Osgoode (289). The former City of Ottawa (not the region) had the least number of farms, at 10 (necessitating these farms to be combined in the agricultural data with Nepean's 60 farms, in order to protect confidentiality).

4.3 Farm Land and Crop Land

In terms of total land area, the new City of Ottawa has 681,264 acres, which represents just under 10% of the total land area in Eastern Ontario (Table 14). With respect to farm land, in 1996 the study area accounted for 12% of the total farm land area in the Eastern Ontario region. Farm land made up 44% of the total land area in

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[6] In 1996, Statistics Canada defined a census farm as an agricultural operation that produces at least one of the following products intended for sale: crops (field crops, tree fruits or nots, berries or grapes, vegetables or seed); livestock (cattle, pigs, sheep, horses, exotic animals, etc.); poultry (hens, chickens, turkeys, exotic birds, etc.); animal products (milk or cream, eggs, wool, fur, meat); or other agricultural products (greenhouse or nursery products, Christmas trees, mushrooms, sod, honey, maple syrup products). The definition of a census farm was expanded for the 1996 Census of Agriculture to include commercial poultry hatcheries and operations that produced only Christmas trees. This expanded definition resulted in the inclusion of 138 commercial poultry hatcheries and 1,593 operations across Canada that produced only Christmas trees. In 1996, 32 farms in the study area reported growing Christmas trees on a total land base of 639 acres (Statistics Canada, 1996).

the new City of Ottawa in 1996. There was virtually no increase in farm land between 1991 and 1996 at the regional level (Eastern Ontario). According to the statistics, the new City of Ottawa experienced a loss of 2,286 acres of farm land between 1991 and 1996. This represents a loss of less than 1% (Table 13). It's worth noting that the period between 1991 and 1996 was a period of unusually slow growth in the study area. In contrast, the period between 1986 and 1991 saw a loss of at least 3,500 acres to development (Ian Cross, 2000).

Some municipalities in the new City of Ottawa experienced an increase in farm land acreage between 1991 and 1996, including Osgoode, Nepean, Rideau and West Carleton.

4.4 Farm Size

Between 1991 and 1996, the average farm size in the new City of Ottawa increased from 186 acres to 199 acres (Table 13). During the same period, farms across Eastern Ontario and the province of Ontario also experienced a slight increase in average size. Farms in Eastern Ontario averaged 238 acres in 1996, up from 233 acres in 1991. In Ontario, the average farm size went from 196 acres to 205 acres during the same period.

Average farm sizes are highest in Nepean at an average of 365 acres per farm. This is over 100 acres larger than the averages in both Eastern Ontario (239 acres) and Ontario (206 acres). This high average is because 2 of the 70 farms located in Nepean are very large; between 2,240 and 2,879 acres. This increases the average size for the 70 farms in Nepean. There are only 3 other farms in the new City of Ottawa that have farm sizes this large, and there are no farms larger than 2,880 acres.

Farms in Rideau and Cumberland also had average farm sizes of over 200 acres. The statistics show that farms are getting larger in the new City of Ottawa as most of the municipalities experienced growth in average farm size between 1991 and 1996. Farms in Gloucester, Goulbourn and Kanata were the smallest in the study area, averaging 154 acres, 183 acres and 184 acres respectively.

In summary, Nepean has large farms, averaging 365 acres each. All other farms in the new City of Ottawa averaged between 154 and 215 acres. Most of the municipalities had increased average farm sizes from 1991 to 1996, remaining consistent with trends in Eastern Ontario and the province.

Table 13. Total Farm Numbers, Total Number of Farms, Total Farm Land Area, and Average Farm Size for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1991 - 1996

	1991	1996		1991	1996	1991	1996		1991	1996
	Total # of farms		% change	Total # of farms with sales of $2,500 or more		Total farmland (acres)		% change	Average farm size (acres)	
Ontario	68,633	67,557	-1.57%	61,432	59,939	13,470,653	13,879,565	3.04%	196	205
Eastern Ontario	10,655	10,510	-1.36%	9,001	8,782	2,480,000	2,500,799	0.84%	233	238
New City of Ottawa	1,606	1,492	-7.10%	1,358	1,278	299,093	296,807	-0.76%	186	199
Osgoode	336	289	-13.99%	284	250	52,600	55,538	5.59%	157	192
Cumberland	234	188	-19.66%	210	163	41,974	37,723	-10.13%	179	201
Gloucester [a]	107	125	16.82%	87	125	20,510	18,957	-7.57%	192	152
Nepean [b]	71	70	-1.41%	66	60	22,989	25,560	11.18%	324	365
Rideau	218	211	-3.21%	185	181	41,363	43,168	4.36%	190	205
Goulbourn	182	164	-9.89%	144	127	33,729	29,941	-11.23%	185	183
Kanata	58	45	-22.41%	47	31	9,232	8,282	-10.29%	159	184
West Carleton	400	400	0.00%	335	341	76,696	77,638	1.23%	192	194

[a] Gloucester farm number figure for 1996 was replaced with 1997 tax file data to compensate for anomalies found in the Statistic Canada Agriculture Census data. The tax file data estimate for the number of farms in Gloucester is based on farms with revenues of $10,000 or more. Farm totals for Ontario, Eastern Ontario and the new City of Ottawa have been adjusted accordingly.

[b] Napean figures include farms located within the boundaries of the old City of Ottawa

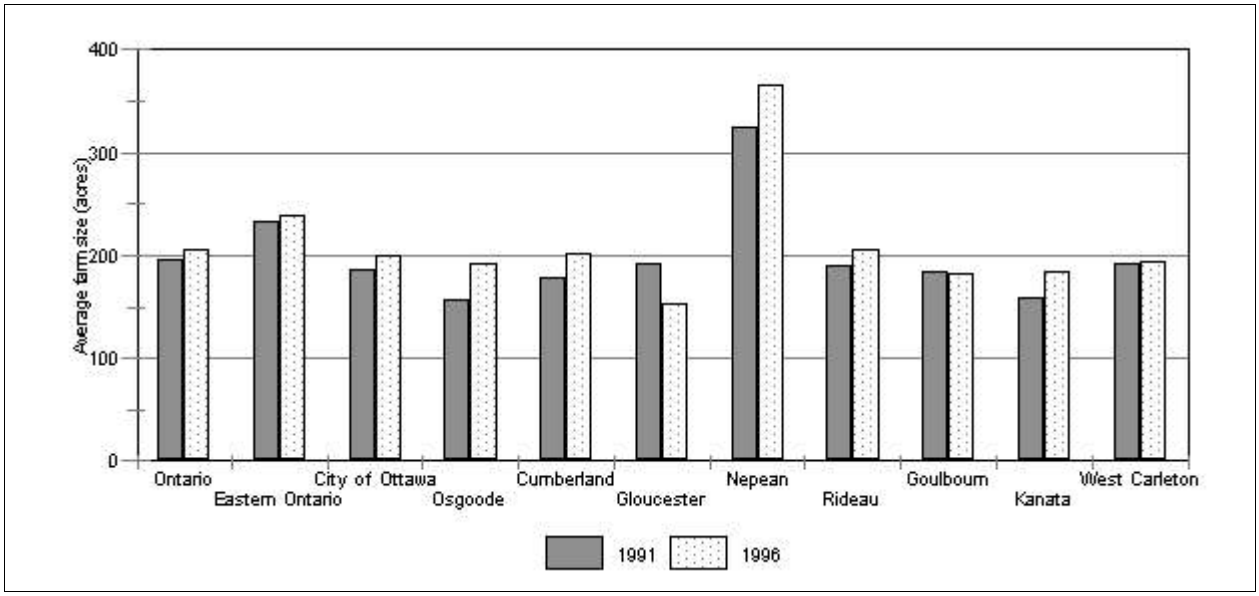
Source: 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Table 14. Total Land Area, Farm Land Area as a Percentage of Total Land Area, Land Area in Crops, Percentage of Farm Land in Crops, Crop Land Area as a Percentage of Total Land Area for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1991 - 1996

	Total land area (acres)	Farmland area as a % of total land area 1996	1991	1996		1991	1996	Crop land area as a % of total land area 1996
			Land in crops (acres)		% change	% of farmland in crops		
Ontario	226,529,830	6.13%	8,430,414	8,759,707	3.91%	62.58%	63.11%	3.87%
Eastern Ontario	7,122,123	35.11%	1,183,028	1,227,219	3.74%	47.70%	49.07%	17.23%
New City of Ottawa	681,264	43.57%	170,417	175,254	2.84%	56.98%	59.05%	25.72%
Osgoode	93,865	59.17%	34,388	36,513	6.18%	65.38%	65.74%	38.90%
Cumberland	78,009	48.36%	26,610	25,721	-3.34%	63.40%	68.18%	32.97%
Gloucester	72,614	26.11%	10,560	11,295	6.96%	51.49%	59.58%	15.55%
Nepean	80,839	31.62%	16,620	16,171	-2.70%	72.30%	63.27%	20.00%
Rideau	101,004	42.74%	25,332	26,502	4.62%	61.24%	61.39%	26.24%
Goulbourn	67,045	44.66%	17,822	16,316	-8.45%	52.84%	54.49%	24.34%
Kanata	32,700	25.33%	3,305	2,910	-11.95%	35.80%	35.14%	8.90%
West Carleton	154,062	50.39%	35,780	39,826	11.31%	46.65%	51.30%	25.85%

Source: 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Figure 7. Average Farm Size in the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1991 and 1996



Nepean includes the old City of Ottawa.
Source: 1991 Statistics Canada, Agricultural Profile of Ontario. Part 1 ; 1996 Statistics Canada, Agricultural Profile of Ontario.

4.5 Farm Types

Agriculture in the study area is characterized by a variety of production activities. The most prominent types[7] of farming activities in terms of farm numbers are beef, dairy and miscellaneous specialty farms. Miscellaneous specialty farms includes greenhouse flower and plant production, bulbs, shrubs, trees, sod, ornamentals, mushroom houses, honey production, maple syrup production, etc.

Compared to the Eastern Ontario region, the new City of Ottawa has a smaller proportion of beef and dairy farms (Table 15 and Figure 8). With respect to the other livestock sectors, hog farms and poultry farms are small in number, with each type accounting for less than 1% of the total farms in the area. The limited presence of hog and poultry farms in the study area is fairly consistent with the pattern at the regional and

[7] Each census farm is classified according to the predominant commodity produced. Statistics Canada does this by estimating the potential receipts from the inventories of crops and livestock reported on the questionnaire. The commodity or group of commodities that accounts for 51% or more of the total potential receipts determines the farm type. For example, a census farm with total potential receipts of 60% from dairy, 20% from hogs and 20% from field crops, would be classified as a dairy farm. Where there is no single major commodity associated with the farm operation (i.e. 45% dairy, 45% hogs and 10% field crops; 40% grains and oilseeds, 35%, hogs, 25% maple syrup), the farm is categorized as either a 'livestock combination' or 'other combination' operation.

provincial level and is reflective of the high-intensity production that now characterizes these two sectors (i.e. large numbers of livestock units per farm).

Over the past two decades, field crop farms have steadily increased in number in the study region. In 1986, the number of field crop farms in the new City of Ottawa was 6. This increased to 53 farms in 1991, and to 108 farms in 1996. This is the fastest growing farm type in the region. Grain and oilseed farms have declined from 158 farms to 117 farms from 1986 to 1996. Miscellaneous specialty farms have increased from 162 in 1986 to 261 in 1996. In 1996, the new City of Ottawa had a higher proportion of specialty farm types than either the Eastern Ontario region or the province of Ontario (Figure 8 and Table 15).

There are relatively few fruit and vegetable type farms in the study area reflecting the centralization of the industry in other parts of the province where soil and climate conditions afford greater production opportunities.

The distribution of farm types across the study area is not homogenous and has changed over time. In terms of farm numbers in the mid-eighties, dairy operations ranked 1st or 2nd in all the municipalities in the study area except Kanata. This municipality had a concentration of beef farms (66% of all farms in 1986). In the same year, beef was either 1st or 2nd in terms of farm numbers in all municipalities except for Nepean. This municipality had a larger proportion of grain and oilseed farms compared with other municipalities (accounting for a quarter of all farms in the municipality) (Table 15).

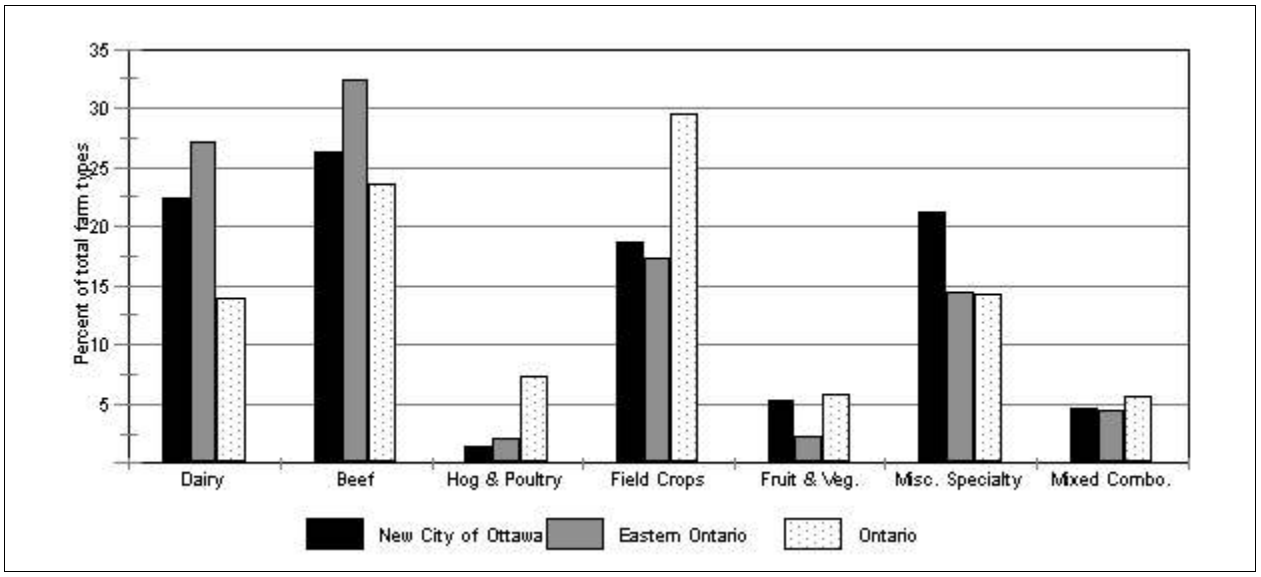
This concentration of beef and dairy farms, which was very strong in 1986, continued in 1996, but with less intensity. In 1996, dairy farms ranked 1st or 2nd in only Osgoode, Cumberland, and Rideau. Beef farms ranked 1st or 2nd in Osgoode, Nepean, Goulbourn, Kanata and West Carleton (Table 15 and Figure 9a).

In 1986, most municipalities had between 10% to 15% of their farms categorized as miscellaneous speciality. In 1996, these figures increased to between 15% to 25% of total farms. This farm type ranked either 1st or 2nd in terms of total farm numbers in Cumberland, Gloucester, Rideau, Goulbourn, Kanata and West Carleton.

Almost a quarter of the farms in Nepean were grain and oilseed farms in 1996. This is a significant amount compared with both the study area (10% of farms) and Eastern Ontario (7% of farms) (Table 15).

In 1996, half of the farms in Kanata were beef farms, followed by field crops (16%) and miscellaneous speciality (16%). Fruit and vegetable farms do not appear to be concentrated in any single municipality within the new City of Ottawa.

Figure 8. Farm Types as a Percentage of Total Farms for the New City of Ottawa, Eastern Ontario and Ontario, 1996

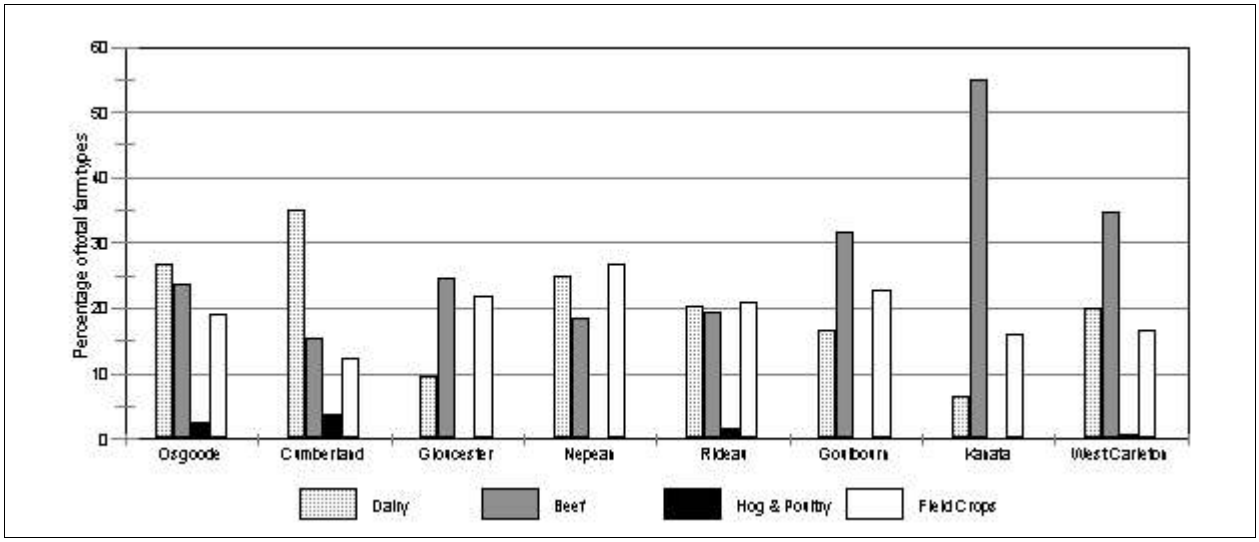


Field crops includes wheat, grain and oilseed crops, and field crop types. Mixed combo includes livestock combination and other combination types. Based on farms reporting farm gate sales of $2,500 or more.
Source: 1996 Statistics Canada, Agricultural Profile of Ontario.

In summary, farm numbers in the new City of Ottawa region have shown a decrease over the past three census periods. Between 1986 and 1996 there was a 11% decrease in farm numbers in the study area (-146 farms) compared to a 2.4% decrease in the Eastern Ontario region (-240 farms) and a 5% decrease across the province of Ontario (-3,366 farms). The decrease in farm numbers has been accompanied by a shift in farm types in the study area. While dairy and beef farm numbers have declined,[8] the diversity of the local agriculture sector has been enhanced in recent years with the growth of miscellaneous specialty type farming enterprises.

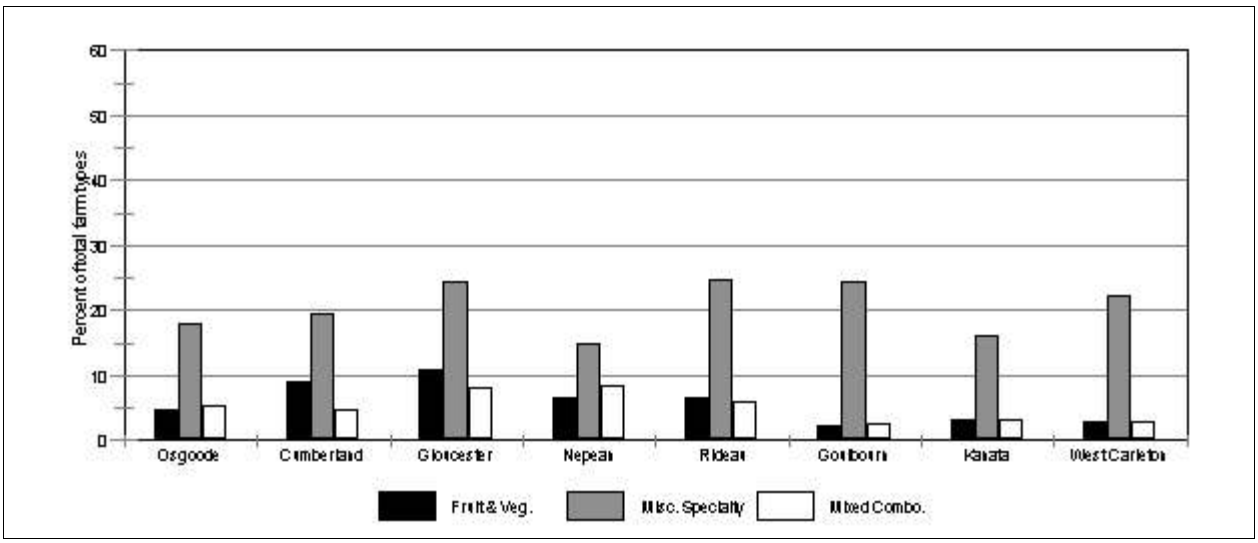
[8] Caution needs to be exercised when interpreting the decline in farm numbers for any given sector. The rate of decline in farm numbers between two periods may not produce a corresponding decline in total production for a given commodity. In examining the dairy sector, we find that milk production levels can be maintained or even increased in a region as a result of increased herd size, and efficiencies gained through improved feed rations, improved herd health and genetic selection. See Figure 4 for additional details.

Figure 9a. Farm Types as a Percentage of Total Farms in the Municipalities within the New City of Ottawa, 1996



Field crops includes wheat, grain and oilseed crops, and field crop farm types.
Based on farms reporting farm gate sales of $2,500 or more.
Source: 1996 Statistics Canada, Agricultural Profile of Ontario.

Figure 9b. Farm Types as a Percentage of Total Farms in the Municipalities within the New City of Ottawa, 1996



Mixed Combo includes livestock combination and other combination farm types.
Based on farms reporting sales of $2,500 or more.
Source: 1996 Statistics Canada, Agricultural Profile of Ontario.

Figure 10a. Farm Types as a Percentage of Total Farms in the New City of Ottawa for 1986, 1991 and 1996

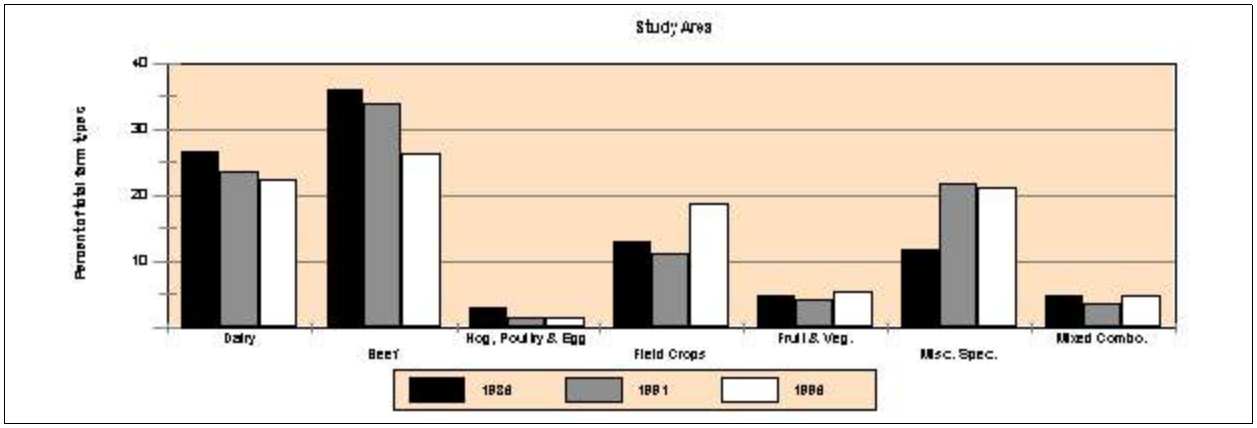


Figure 10b. Farm Types as a Percentage of Total Farms in Eastern Ontario for 1986, 1991 and 1996

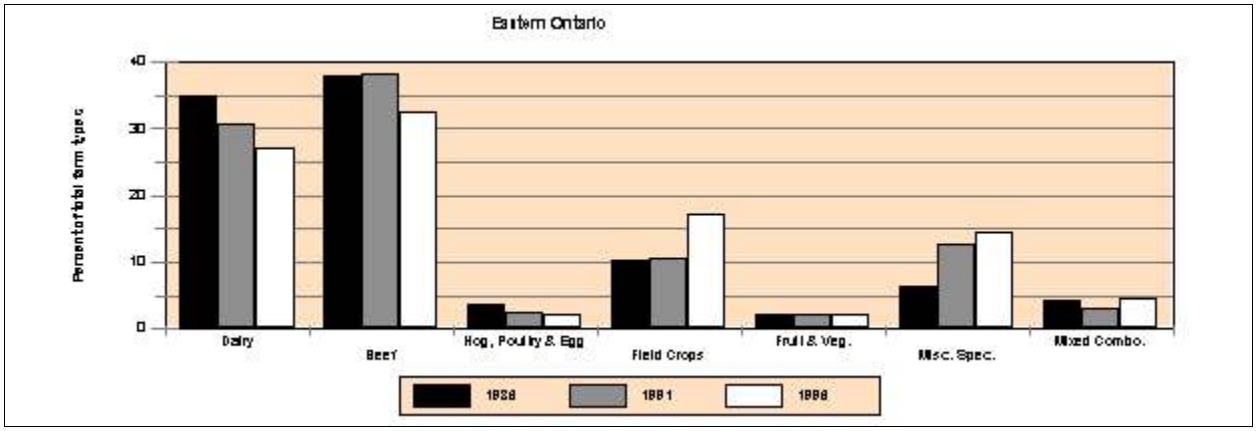
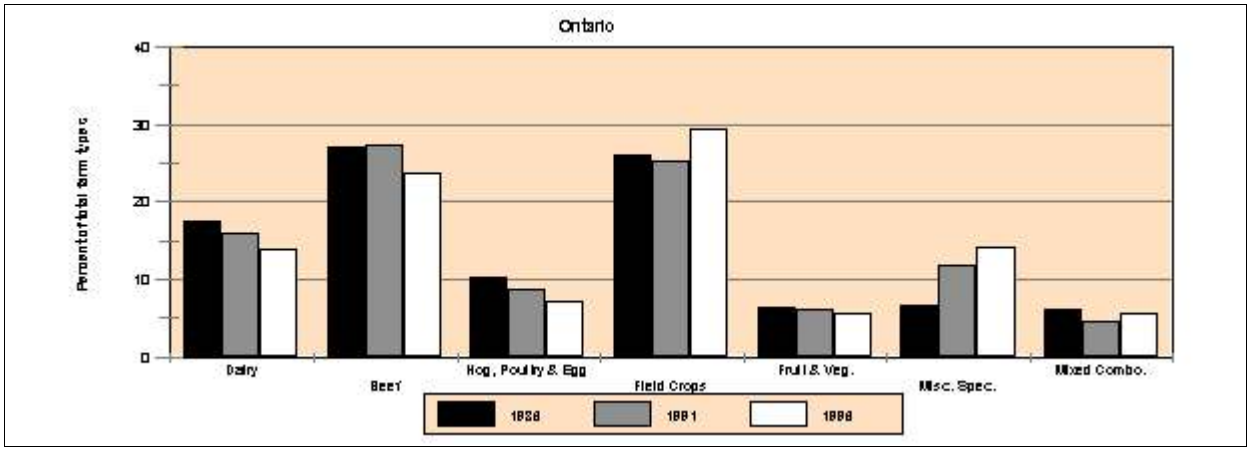


Figure 10c. Farm Types as a Percentage of Total Farms in Ontario for 1986, 1991 and 1996



Field Crops includes wheat, grain and oilseed, and field crop farm types. Mixed Combo includes livestock combination and other combination. Based on farms reporting sales of $2,500 or more.
Source: 1986, 1991 and 1996 Statistics Canada. Agricultural Profile of Ontario.

Table 15. Number of Farms [a] by Major Products [b] for the New City of Ottawa, Eastern Ontario and Ontario, 1986, 1991 and 1996 with Percent Change for 1986-

1991, 1991-1996 and 1986-1996

	Total # of farms	Dairy	Beef	Hog	Poultry & Egg	Wheat	Grain & oilseed	Field crops	Fruit	Veg.	Misc. Specialty	Livestock combo.	Other combo.
1986													
City of Ottawa region	1,372	366	495	21	18	14	158	6	27	40	162	12	53
% of farms in the study area	100%	26.68%	36.08%	1.53%	1.31%	1.02%	11.51%	0.44%	1.97%	2.92%	11.81%	0.87%	3.86%
Eastern Ontario	8,970	3,122	3,411	208	132	63	823	50	90	96	586	91	298
% of farms in Eastern Ontario	100%	34.80%	38.03%	2.32%	1.47%	0.70%	9.18%	0.56%	1.00%	1.07%	6.53%	1.01%	3.32%
Ontario	63,253	11,028	17,160	4,840	1,643	733	13,693	1,988	2,298	1,791	4,203	1,653	2,223
% of farms in Ontario	100%	17.43%	27.13%	7.65%	2.60%	1.16%	21.65%	3.14%	3.63%	2.83%	6.64%	2.61%	3.51%
1991													
City of Ottawa region	1,358	321	461	14	7	2	95	53	25	33	297	29	21
% of farms	100%	23.64%	33.95%	1.03%	0.52%	0.15%	7.00%	3.90%	1.84%	2.43%	21.87%	2.14%	1.55%
Eastern Ontario Region	9,001	2,780	3,440	134	93	14	517	414	98	109	1,133	168	101
% of farms	100%	30.89%	38.22%	1.49%	1.03%	0.16%	5.74%	4.60%	1.09%	1.21%	12.59%	1.87%	1.12%
Ontario	61,432	9,757	16,855	3,827	1,583	529	11,433	3,535	2,107	1,639	7,312	1,921	934
% of farms	100%	15.88%	27.44%	6.23%	2.58%	0.86%	18.61%	5.75%	3.43%	2.67%	11.90%	3.13%	1.52%
1996													
City of Ottawa region	1,226	274	323	10	7	4	117	108	25	40	261	28	29
% of farms	100%	22.35%	26.35%	0.82%	0.57%	0.33%	9.54%	8.81%	2.04%	3.26%	21.29%	2.28%	2.37%
% change '86 - '91	-1.02%	-12.30%	-6.87%	-33.33%	-61.11%	-85.71%	-39.87%	783.33%	-7.41%	-17.50%	83.33%	141.67%	-60.38%
% change '91 - '96	-9.72%	-14.64%	-29.93%	-28.57%	0.00%	100.00%	23.16%	103.77%	0.00%	21.21%	-12.12%	-3.45%	38.10%
% change '86 - '96	-10.64%	-25.14%	-34.75%	-52.385	-61.11%	-71.43%	-25.95%	1,700.00%	-7.41%	0.00%	61.11%	133.33%	-45.28%
Eastern Ontario Region	8,730	2,370	2,828	78	102	12	599	901	95	98	1,257	198	192
% of farms	100%	27.15%	32.39%	0.89%	1.17%	0.14%	6.86%	10.32%	1.09%	1.12%	14.40%	2.27%	2.20%
% change '86 - '91	0.35%	-10.95%	0.85%	-35.58%	-29.55%	-77.78%	-37.18%	728.00%	8.89%	13.54%	93.34%	84.62%	-66.11%
% change '91 - '96	-3.01%	-14.75%	-17.79%	-41.79%	9.68%	-14.29%	15.86%	117.63%	-3.06%	-10.09%	10.94%	17.86%	90.10%
% change '86 - '96	-2.68%	-24.09%	-17.09%	-62.50%	-22.73%	-80.95%	-27.22%	1702.00%	5.56%	2.08%	114.51%	117.58%	-35.57%
Ontario	59,887	8,320	14,172	2,677	1,686	466	12,250	4,965	2,016	1,428	8,547	2,030	1,330
% of farms	100%	13.89%	23.66%	4.47%	2.82%	0.78%	20.46%	8.29%	3.37%	2.38%	14.27%	3.39%	2.22%
% change '86 - '91	-2.88%	-11.53%	-1.78%	-20.93%	-3.65%	-27.83%	-16.50%	77.82%	-8.31%	-8.49%	73.97%	16.21%	-57.98%
% change '91 - '96	-2.51%	-14.73%	-15.92%	-30.05%	6.51%	-11.91%	7.15%	40.45%	-4.32%	-12.87%	16.89%	5.67%	42.40%
% change '86 - '96	-5.32%	-24.56%	-17.41%	-44.69%	2.62%	-36.43%	-10.54%	149.75%	-12.27%	-20.27%	103.35%	22.81%	-40.17%

[a] Farm numbers are based on farms reporting farm gate sales of $2,500 or more.

[b] Poultry and Egg include broilers, pullets and pullet chicks. Grain and oilseed include oats, barley, mixed grain, grain corn, rye, canola, soybeans and sunflower. Field crops include alfalfa and alfalfa mixtures, corn and sorghum for silage, field peas, tobacco, etc. Miscellaneous specialty includes cut flowers, bulbs, shrubs, trees, sod, ornamentals, etc. Livestock combination refers to two types of livestock or more, i.e. poultry & beef, dairy & swine.

Source: 1986 Statistics Canada. Agriculture, Ontario. ; 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Table 16a. Number of Farms [a] by Major Products [b] for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1986

1986	Total # of farms	Dairy	Beef	Hog	Poultry & Egg	Wheat	Grain & oilseed	Field crops	Fruit	Veg.	Misc. Specalty	Livestock combo.	Other combo.
Ontario	63,253	11,028	17,160	4,840	1,643	733	13,693	1,988	2,298	1791	4,203	1,653	2,223
Eastern Ontario	8,970	3,122	3,411	208	132	63	823	50	90	96	586	91	298
City of Ottawa	1,372	366	495	21	18	14	158	6	27	40	162	12	53
% of farms in City of Ottawa	100%	26.7%	36.1%	1.5%	1.3%	1.0%	11.5%	0.4%	1.9%	2.9%	11.8%	0.9%	3.9%
Osgoode	282	89	75	10	3	6	43	1	6	7	27	1	14
Cumberland	195	76	49	4	3	1	11	1	2	17	26	0	5
Gloucester	99	20	36	0	0	1	7	0	2	11	16	2	4
Nepean	63	19	12	0	1	0	16	0	3	0	9	0	3
Rideau	172	47	44	1	4	1	30	2	5	2	27	3	6
Goulbourn	155	28	73	4	3	3	14	1	2	2	16	2	7
Kanata	67	2	44	0	1	0	4	0	3	1	7	1	4
West Carleton	339	85	162	2	3	2	33	1	4	0	34	3	10

Table 16b. Number of Farms [a] by Major Products [b] for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1991

1991	Total # of farms	Dairy	Beef	Hog	Poultry & Egg	Wheat	Grain & oilseed	Field crops	Fruit	Veg.	Misc. Specialty	Livestock combo.	Other combo.
Ontario	61,432	9,757	16,855	3,827	1,583	529	11,433	3535	2107	1639	7,312	1,921	934
Eastern Ontario	9,001	2,780	3,440	134	93	14	517	414	98	109	1,133	168	101
City of Ottawa	1,358	321	461	14	7	2	95	53	25	33	297	29	21
% of farms in the City of Ottawa	100%	23.6%	34.0%	1.0%	0.5%	0.2%	7.0%	3.9%	1.8%	2.4%	21.9%	2.1%	1.5%
Osgoode	284	80	82	7	2	1	25	13	5	6	51	6	6
Cumberland	210	69	54	1	1	0	7	9	2	10	50	5	2
Gloucester	87	16	20	0	0	0	5	4	2	5	30	2	3
Nepean	66	15	10	0	0	0	13	1	3	2	20	0	2
Rideau	185	47	48	0	2	0	21	7	6	3	45	2	4
Goulbourn	144	22	63	2	0	1	9	3	0	2	36	4	2
Kanata	47	1	28	0	0	0	0	2	1	1	12	2	0
West Carleton	335	71	156	4	2	0	15	14	6	4	53	8	2

[a] Farm numbers are based on farms reporting farm gate sales of $2,500 or more.

[b] Poultry and Egg include broilers, pullets and pullet chicks. Grain and oilseed include oats, barley, mixed grain, grain corn, rye, canola, soybeans and sunflower.

Field crops include alfalfa and alfalfa mixtures, corn and sorghum for silage, field peas, tobacco, etc. Miscellaneous specialty includes cut flowers, bulbs, shrubs, trees, sod, ornamentals, etc. Livestock combination refers to two types of livestock or more, i.e. poultry & beef, dairy & swine.
Source: 1986 Statistics Canada. Agriculture, Ontario.; 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Table 16c. Number of Farms [a] by Major Products [b] for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1996

1996	Total # of farms	Dairy	Beef	Hog	Poultry & Egg	Wheat	Grain & oilseed	Field crops	Fruit	Veg.	Misc. Specialty	Livestock combo.	Other combo.
Ontario	59,887	8,320	14,172	2,677	1,686	466	12,250	4,965	2,016	1,428	8,547	2,030	1,330
Eastern Ontario	8,730	2,370	2,828	78	102	12	599	901	95	98	1,257	198	192
City of Ottawa	1,226	274	323	10	7	4	117	108	25	40	261	28	29
% of farms in the City of Ottawa	100%	22.4%	26.4%	0.8%	0.6%	0.3%	9.5%	8.8%	2.0%	3.3%	21.3%	2.3%	2.4%
Osgoode	250	67	59	4	2	0	28	20	6	6	45	5	8
Cumberland	163	57	25	3	3	0	8	12	2	13	32	1	7
Gloucester	73	7	18	0	0	0	7	9	2	6	18	4	2
Nepean	60	15	11	0	0	1	14	1	2	2	9	2	3
Rideau	181	37	35	1	2	3	21	14	6	6	45	7	4
Goulbourn	127	21	40	0	0	0	12	17	2	1	31	2	1
Kanata	31	2	17	0	0	0	0	5	1	0	5	1	0
West Carleton	341	68	118	2	0	0	27	30	4	6	76	6	4

[a] Farm numbers are based on farms reporting farm gate sales of $2,500 or more.

[b] Poultry and Egg include broilers, pullets and pullet chicks. Grain and oilseed include oats, barley, mixed grain, grain corn, rye, canola, soybeans and sunflower. Field crops include alfalfa and alfalfa mixtures, corn and sorghum for silage, field peas, tobacco, etc. Miscellaneous specialty includes cut flowers, bulbs, shrubs, trees, sod, ornamentals, etc. Livestock combination refers to two types of livestock or more, i.e. poultry & beef, dairy & swine.

Source: 1986 Statistics Canada. Agriculture, Ontario.; 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

4.6 Farm Gate Sales [9] and Farm Productivity

In 1995, 1,492[10] farms in the new City of Ottawa generated a total of $136.7 million in farm gate sales (or gross farm receipts). Within the new City of Ottawa, the 289 farms located in the township of Osgoode had the highest farm gate sales with $39.1 million. This was followed by and West Carleton (400 farms with $22.8 million) and the township of Cumberland (188 farms with $21.1 million). Rideau generated $16.6 million in farm gate sales with 211 farms while Gloucester generated $15.8 million with 88. The 70 farms located in Nepean (including the former City of Ottawa) generated $10.6 million in sales, while Goulbourn (164 farms) and Kanata (45 farms) had $9.6 million and $969,606 respectively. The new City of Ottawa accounted for 17% of the total farm gate sales in the Eastern Ontario region and approximately 2% of the provincial total (Table 17).

On a per farm basis, Nepean had the largest amount, generating an average of $152,000 per farm. Farms in Osgoode, Gloucester and Cumberland produced between 110,000 and 135,000, on average. Rideau, Goulbourn and West Carleton produced between $50,000 and 80,000 per farm, while Kanata produced just over 21,000 per farm (Table 17). Overall, the new City of Ottawa generated $91,000 in farm gate sales per farm. Thus, the study area experienced a higher level of farm gate sales on a per farm basis than the Eastern Ontario region ($74,000 per farm) but a comparable amount to the province of Ontario ($114,000 per farm).

Compared to the Eastern Ontario region and Ontario, the new City of Ottawa experienced the largest rate of growth in farm gate receipts between 1990 and 1995, at 23%. The percent changes for Eastern Ontario and Ontario were 8% and 18% respectively.

Almost every municipality in the new City of Ottawa experienced an increase in total farm gate sales between 1990 and 1995. On a per farm basis, the largest increases were recorded in Gloucester (+64%), Osgoode (+48%) and Cumberland (+33%). Goulbourn and Kanata were the only municipalities where farm gate sales declined between 1990 and 1995 (Table 17). The decline in sales may be related to the loss of beef farms in both municipalities (Table 16).

Gloucester, Osgoode and Cumberland were also the highest ranking municipalities

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[9] Statistics Canada data on gross farm receipts (farm gate sales), although collected in 1991 and 1996, reflect total gross farm receipts associated with 1990 and 1995 respectively.

[10] Figures associated with the number of farms, farm gate receipts, farm operating expenses and net farm receipts for the township of Gloucester have been adjusted in this section using tax file data from 1997. This was done to compensate for anomalies that were discovered in the Statistics Canada 1996 Agricultural Profile. The tax file data estimate for Gloucester is based on farms with revenues of $10,000 or more. Figures for the Eastern Ontario region and the province of Ontario have been adjusted accordingly.

in terms of sales per acre of farmland at $838, $705, $560 respectively. In the case of Gloucester and Osgoode, the level of farm gate sales per acre of farmland in 1995 exceeded the provincial average of $560 per acre (Table 17 and Figure 11).

In terms of farm gate sales per acre of crop land, the study area ranks well with the Eastern Ontario region and the province. While the new City of Ottawa region generated an average of $780 per acre of crop land in 1995, the Eastern Ontario region generated $637 and the province $886 per acre of crop land (Table 17). Again, Gloucester and Osgoode ranked highest among the municipalities in the new City of Ottawa, with farm gate sales of $1,406 and $1,072 respectively per acre of crop land. Kanata and West Carleton had the lowest figures with $333 and $573 per acre of crop land in 1995. These decreased by 40% and 6% respectively from 1990 (Table 17 and Figure 12).

In summary, farm gate receipts per farm in the new City of Ottawa are higher ($17,000 more per farm) than Eastern Ontario as a whole. On a per farm basis, the municipalities of Gloucester, Nepean, Osgoode and Cumberland are generally more productive in terms of gross farm receipts.

Table 17. Total Farm Gate Receipts, Farm Gate Receipts per Farm, Farm Gate Receipts per Acre of Farm Land, Farm Gate Receipts per Acre of Crop Land for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1990 - 1995

	1990	1995		1990	1995		1990	1995		1990	1995	
	Total farm gate receipts ($)		% change	Farm gate receipts per farm ($)		% change	Farm receipts per acre of farmland ($)		% change	Farm receipts per acre of crop land ($)		% change
Ontario	6,671,452,382	7,760,803,688	16.33%	97,205	114,878	18.18%	495	559	12.90%	791	886	11.96%
Eastern Ontario	733,984,007	782,330,940	6.59%	68,886	74,437	8.06%	296	313	5.70%	620	637	2.75%
New City of Ottawa	119,366,332	136,734,633	14.55%	74,325	91,645	23.30%	399	461	15.43%	700	780	11.39%
Osgoode	30,726,586	39,131,761	27.35%	91,448	135,404	48.07%	584	705	20.62%	894	1,072	19.94%
Cumberland	19,675,135	21,121,939	7.35%	84,082	112,351	33.62%	469	560	19.45%	739	821	11.06%
Gloucester [a]	8,264,604	15,883,887	92.19%	77,239	127,071	64.52%	403	838	107.94%	783	1,406	79.69%
Nepean [b]	10,605,082	10,644,246	0.37%	149,367	152,061	1.80%	461	416	-9.73%	638	658	3.16%
Rideau	15,659,847	16,570,261	5.81%	71,834	78,532	9.32%	379	384	1.39%	618	625	1.14%
Goulbourn	10,798,968	9,609,293	-11.02%	59,335	58,593	-1.25%	320	321	0.24%	606	589	-2.80%
Kanata	1,850,267	969,606	-47.60%	31,901	21,547	-32.46%	200	117	-41.59%	560	333	-40.48%
West Carleton	21,785,843	22,803,640	4.67%	54,465	57,009	4.67%	284	294	3.40%	609	573	-5.96%

[a] 1997 tax file data is used for Gloucester, based on farms with revenues of $10,000 or more.

[b] Nepean includes area within the old City of Ottawa

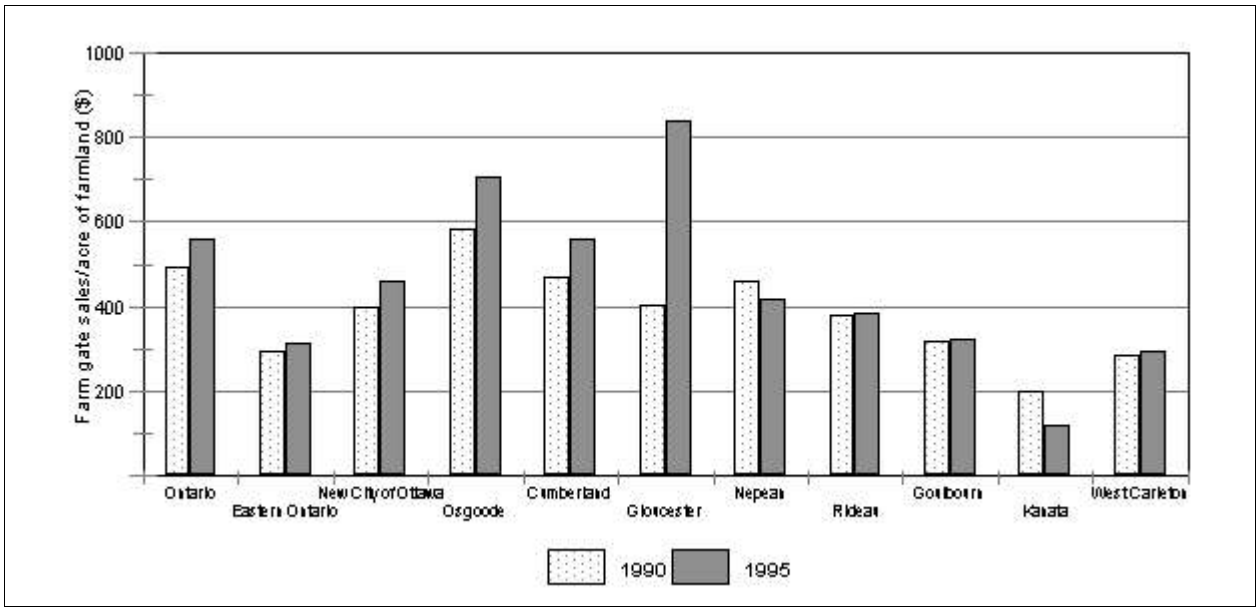
Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Table 18. Total Farm Capital, Capital per Farm, Capital per Acre of Farm Land, Capital per Acre of Crop Land for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1990 - 1995

	1990	1995		1990	1995		1990	1995		1990	1995	
	Total farm capital ($)		% change	Capital per farm ($)		% change	Capital per acre of farmland ($)		% change	Capital per acre of crop land ($)		% change
Ontario	40,702,680,717	40,860,936,035	0.39%	593,048	604,836	1.99%	3,022	2,944	-2.57%	4,828	4,665	-3.38%
Eastern Ontario	4,164,036,008	4,775,193,648	14.68%	390,806	454,348	16.26%	1,679	1,909	13.72%	3,520	3,891	10.55%
New City of Ottawa	933,245,237	898,709,155	-3.70%	581,099	602,352	3.66%	3,120	3,028	-2.96%	5,476	5,128	-6.36%
Osgoode	158,987,239	170,546,513	7.27%	473,176	590,126	24.72%	3,023	3,071	1.60%	4,623	4,671	1.03%
Cumberland	163,671,582	113,198,758	-30.84%	699,451	602,121	-13.92%	3,899	3,001	-23.04%	6,151	4,401	-28.45%
Gloucester	84,707,611	77,385,091	-8.64%	791,660	619,081	-21.80%	4,130	4,082	-1.16%	8,022	6,851	-14.59%
Nepean	125,825,214	110,738,076	-11.99%	1,772,186	1,581,973	-10.73%	5,473	4,332	-20.84%	7,571	6,848	-9.55%
Rideau	118,695,781	120,061,075	1.15%	544,476	569,010	4.51%	2,870	2,781	-3.08%	4,686	4,530	-3.32%
Goulbourn	82,755,371	89,957,054	8.70%	454,700	548,519	20.63%	2,454	3,004	22.45%	4,643	5,513	18.74%
Kanata	31,734,013	21,929,078	-30.90%	547,138	487,313	-10.93%	3,437	2,648	-22.97%	9,602	7,536	-21.52%
West Carleton	166,868,426	194,893,510	16.79%	417,171	487,234	16.79%	2,176	2,510	15.38%	4,664	4,894	4.93%

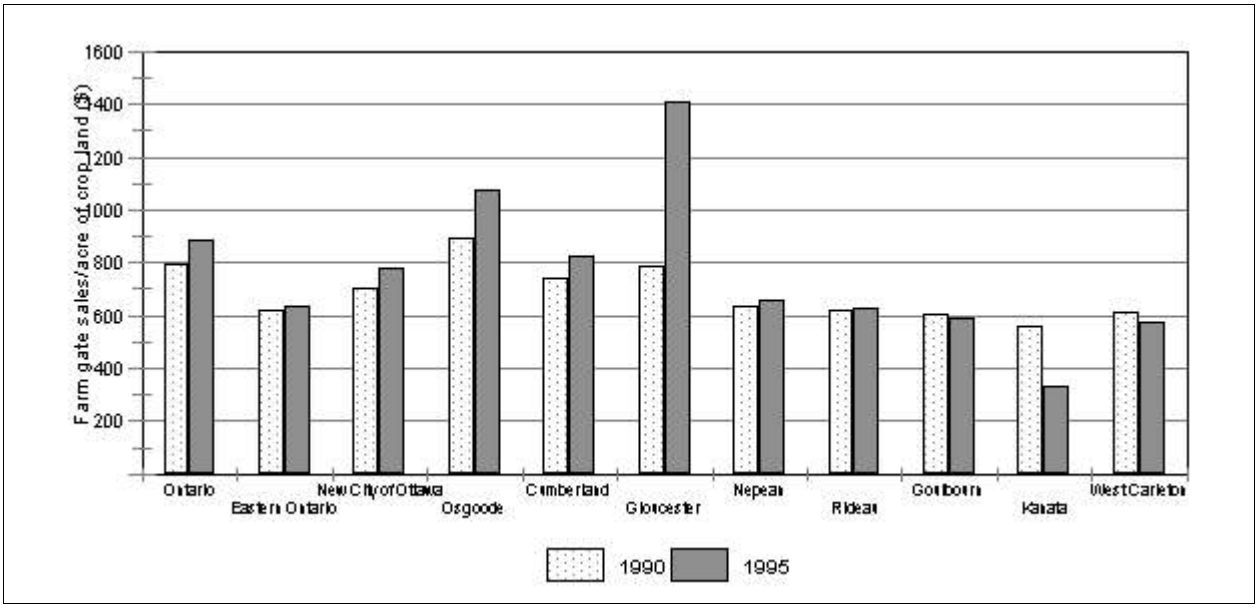
Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Figure 11. Farm Gate Sales per Acre of Farm Land in the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Figure 12. Farm Gate Sales per Acre of Crop Land for the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario

4.7 Farm Capital

Farm capital includes the value of all farm land, buildings, farm

equipment and machinery, as well as livestock and poultry. The values provided for farm land, buildings and equipment, are based on each farmers' assessment of the value. Values associated with livestock and poultry inventories are calculated based on commodity prices.

Between 1990 and 1995, the total value of farm capital in the new City of Ottawa region decreased from $933 million to $899 million. At the township level, West Carleton held the largest share of farm capital in 1995 with $195 million (Table 18).

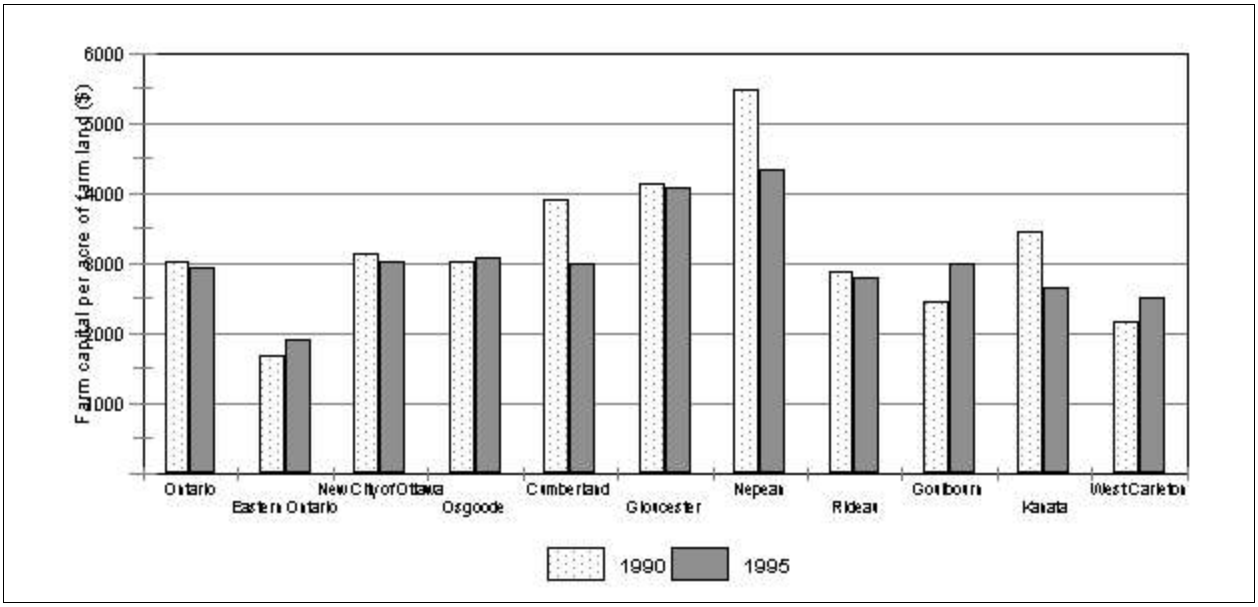
While the total value of farm capital increased by less than 1% across Ontario, it increased by 17% in West Carleton, 9% in Goulbourn, 7% in Osgoode and 1% in Rideau. The Eastern Ontario region increased it's share of total farm capital by 15% from 1990 to 1995 (Table 18).

In terms of farm capital per farm, the average value of farm capital in the new City of Ottawa in 1995 was $602,000 per farm. This average is $148,000 higher than the Eastern Ontario average and just slightly lower than the provincial average. The new City of Ottawa had an increase of 3.7% over the 1990 value of $581,000 (Table 18). While this rate of growth was higher than the provincial rate of 2%, it was lower than the rate of growth experienced in the Eastern Ontario region, at 16%.

In dollar terms, Nepean recorded the highest capital value, with $1,582,000 per farm in 1995. This is 2 ½ times the provincial standard of $593,000 per farm. Gloucester and Cumberland also surpassed the provincial average, with $619,000 and $602,000 per farm respectively. All of the municipalities in the new City of Ottawa had higher capital values per farm compared with the larger region of Eastern Ontario.

On a per acre basis, the average value of farm capital per acre of farm land in the new City of Ottawa amounted to $3,028 in 1995. This is higher than the values recorded for the Eastern Ontario region ($1,909) and Ontario ($2,944). More than half of the municipalities in the new City of Ottawa had higher average farm capital values per acre of farmland compared with the provincial amount (Table 16). This includes Nepean ($4,332), Gloucester ($4,082), Osgoode ($3,071), Goulbourn ($3,004) and Cumberland ($3,001). While these municipalities had high average values compared to the province, not all of them experienced increased rates from 1990 to 1995. The only municipalities to experience positive rates of growth between 1990 and 1995 were Goulbourn (22%), West Carleton (15%) and Osgoode (2%) (Table 18 and Figure 13).

Figure 13. Value of Farm Capital per Acre of Farm Land in the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario

4.8 Farm Operating Expenses[11]

Farm operating expenses serve as one indicator of the contribution that farmers make to the wider economy through the purchase of goods and services. The total value of farm operating expenses in the new City of Ottawa in 1995 was $117.2 million, which represents 18% of the total value of farm operating costs in the Eastern Ontario region, and 2% of the operating costs in Ontario (Table 19).

At the municipal level, the largest share of operating costs was in Osgoode ($33.6 million), representing 28% of all farm expenses in the new City of Ottawa in 1995. The second highest level of total farm expense was recorded in West Carleton with $20 million, followed by Cumberland at $16.8 million.

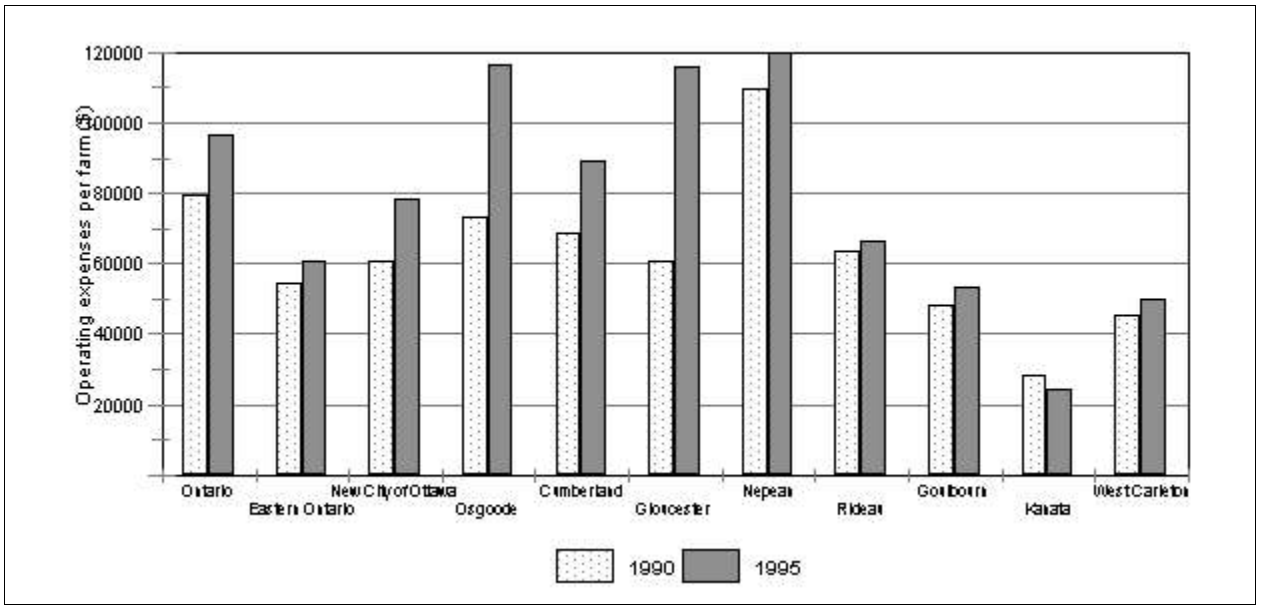
Total farm operating expenses for the new City of Ottawa increased by 20% between 1990 and 1995, which was equivalent to the provincial rate but somewhat higher than the Eastern Ontario rate of 9%. At the municipal level, Gloucester experienced the highest rate of growth at 122%. Osgoode showed an increased rate of 37% (Table 19). Total farm operating expenses in Kanata declined by 34% which reflects the decline in farm numbers and total farm gate sales in the municipality during the same period (Tables 13 and 17).

In 1995, the average operating cost per farm in the new City of Ottawa was $78,533

[11] Statistics Canada data on farm operating expenses, although collected in 1991 and 1996, reflect total farm expenses associated with 1990 and 1995 respectively.

while the average for the Eastern Ontario region and Ontario was $60,522 and $96,676 respectively (Table 19 and Figure 14). Farm expenses per farm were higher than the national average in Nepean ($119,960), Osgoode ($116,270) and Gloucester ($115.989). The lowest operating expenses per farm were found in Kanata ($24,431).

Figure 14. Operating Expenses per Farm in the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



Source: 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario

Table 19. Total Farm Expenses, Expenses per Farm, Expenses per Acre of Farm Land, Expenses per Acre of Crop Land for Ontario, Eastern Ontario and the New City of Ottawa and its Municipalities, 1990 - 1995

	1990	1995		1990	1995		1990	1995		1990	1995	
	Total farm operating expenses ($)		% change	Expenses per farm ($)		% change	Expenses per acre of farmland ($)		% change	Expenses per acre of crop land ($)		% change
Ontario	5,462,588,275	6,531,122,975	19.56%	79,591	96,676	21.47%	406	471	16.04%	648	746	15.07%
Eastern Ontario	582,416,025	636,085,346	9.21%	54,661	60,522	10.72%	235	254	8.31%	492	518	5.28%
New City of Ottawa	97,249,282	117,171,833	20.49%	60,554	78,533	29.69%	325	395	21.41%	571	669	17.16%
Osgoode	24,525,778	33,601,977	37.01%	72,993	116,270	59.29%	466	605	29.76%	713	920	29.03%
Cumberland	16,123,286	16,785,428	4.11%	68,903	89,284	29.58%	384	445	15.84%	606	653	7.71%
Gloucester [a]	6,521,663	14,487,311	122.14%	60,950	115,898	90.15%	318	764	140.34%	618	1283	107.69%
Nepean [b]	7,805,028	8,397,190	7.59%	109,930	119,960	9.12%	340	329	-3.23%	470	519	10.57%
Rideau	13,842,888	14,002,903	1.16%	63,499	66,364	4.51%	335	324	-3.07%	546	528	-3.31%
Goulbourn	8,730,565	8,741,147	0.12%	47,970	53,300	11.11%	259	292	12.79%	490	536	9.36%
Kanata	1,652,679	1,099,405	-33.48%	28,494	24,431	-14.26%	179	133	-25.85%	500	378	-24.45%
West Carleton	18,047,395	20,056,472	11.13%	45,118	50,141	11.13%	235	258	9.78%	504	504	-0.16%

[a] 1997 tax file data is used for Gloucester, based on farms with revenues of $10,000 or more.

[b] Nepean includes area within the old City of Ottawa

Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

Table 20. Net Farm Receipts, Farm Expenses as a Percentage of Farm Receipts, Net Receipts per Farm, Net Receipts per Acre of Crop Land for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1990 - 1995

	1990	1995		1990	1995	1990	1995		1990	1995	
	Net farm receipts ($)		% change	Farm expenses as a % of farm receipts		Net receipts per farm ($)		% change	Net receipts per acre of crop land ($)		% change
Ontario	1,208,864,107	1,229,680,713	1.72%	81.88%	84.16%	17,613	18,202	3.34%	143	140	-2.10%
Eastern Ontario	151,567,982	146,245,594	-3.51%	79.35%	81.31%	14,225	13,915	-2.18%	128	119	-6.99%
New City of Ottawa	22,117,050	19,562,800	-11.55%	81.47%	85.69%	13,772	13,112	-4.79%	130	112	-13.99%
Osgoode	6,200,808	5,529,784	-10.82%	79.82%	85.87%	18,455	19,134	3.68%	180	151	-16.01%
Cumberland	3,551,849	4,336,511	22.09%	81.95%	79.47%	15,179	23,067	51.97%	133	169	26.31%
Gloucester	1,742,941	1,396,576	-19.87%	78.91%	91.21%	16,289	11,173	-31.41%	165	124	-25.09%
Nepean	2,800,054	2,247,056	-19.75%	73.60%	78.89%	39,437	32,101	-18.60%	168	139	-17.52%
Rideau	1,816,959	2,567,358	41.30%	88.40%	84.51%	8,335	12,168	45.99%	72	97	35.06%
Goulbourn	2,068,403	868,146	-58.03%	80.85%	90.97%	11,365	5,294	-53.42%	116	53	-54.15%
Kanata	197,588	-129,799	-165.69%	89.32%	113.39%	3,407	-2,884	-184.67%	60	-45	-174.61%
West Carleton	3,738,448	2,747,168	-26.52%	82.84%	87.95%	9,346	6,868	-26.52%	104	69	-33.98%

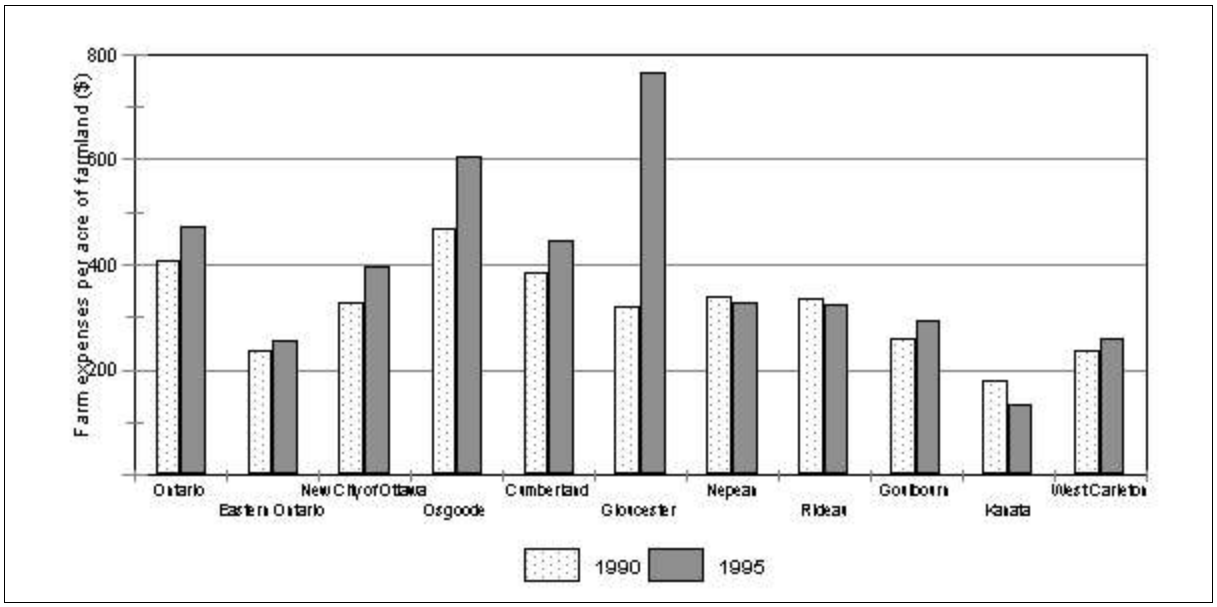
Source:1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

4.9 Operating Expenses per Acre of Farm Land and Crop Land

In 1995, the average operating costs per acre of farm land for the new City of Ottawa was $395, up 21% from an average of $325 in 1990. The average expenses for the study area in 1995 were somewhat lower than the provincial average of $471 per acre of farm land. The average operating costs at the municipal level ranged from $133 per acre of farm land in Kanata to +$600 per acre of farm land in Gloucester and Osgoode. All of the municipalities in the study area, except for Kanata and West Carleton, surpassed the Eastern Ontario average of $254 per acre of farm land (Figure 15). Gloucester had the highest increase from 1990 to 1995 at 140%, followed by Osgoode (30%), Cumberland (16%), Goulbourn (13%) and West Carleton (10%). The rest of the municipalities had decreased rates from 1990 to 1995.

Operating expenses per acre of crop land for the City of Ottawa region were $669 in 1995 compared to $746 for the province and $492 for Eastern Ontario. This average increased at twice the rate of the provincial average from 1990 to 1995.

Figure 15. Operating Expenses per Acre of Farm Land for the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



Source: 1991 Statistics Canada, Agricultural Profile of Ontario. ; 1996 Statistics Canada Agricultural Profile of Ontario.

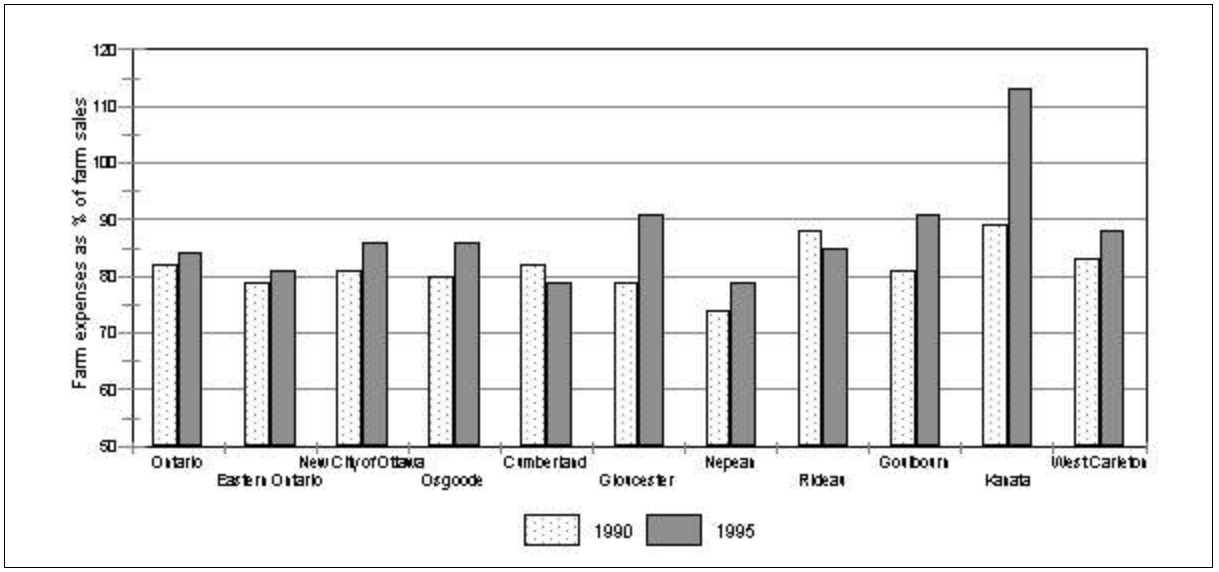
4.10 Net Farm Receipts

Net farm receipts represent the value of total farm gate receipts minus total farm operating expenses. The value of total net receipts for the new City of Ottawa was $19.5 million in 1995, down 11% from 1990, when total net receipts amounted to $22.1 million. A general decline in net farm receipts was experienced across the Eastern Ontario region between 1990 and 1995, while Ontario overall experienced a moderate increase. Net farm receipts in the study area accounted for 13.4% of the total for the Eastern Ontario region and 1.6% of Ontario (Table 20).

Within the new City of Ottawa, Osgoode recorded the highest level of net receipts with $5.5 million, followed by Cumberland with $4.3 million. Kanata was the only municipality that had negative net receipts of -$129,799. Two of the eight municipalities experienced increases in net receipts between 1990 and 1995. These were Rideau (41%) and Cumberland (22%) Indeed, these increases in net receipts were substantially higher than the average rate of increase across the province (2%).

In 1995, total farm operating expenses in the study area amounted to 85.7% of total farm gate receipts. In contrast, total farm operating expenses in the Eastern Ontario region amounted to 81.3% of total farm gate receipts while total farm operating expenses in Ontario amounted to 84.1% of total farm gate receipts. The municipalities of Nepean and Cumberland, recorded the best performances of all the municipalities of the study area with farm operating expenses both amounting to 79% of total farm gate receipts (Table 20 and Figure 16).

Figure 16. Farm Expenses as a Percentage of Farm Receipts for the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



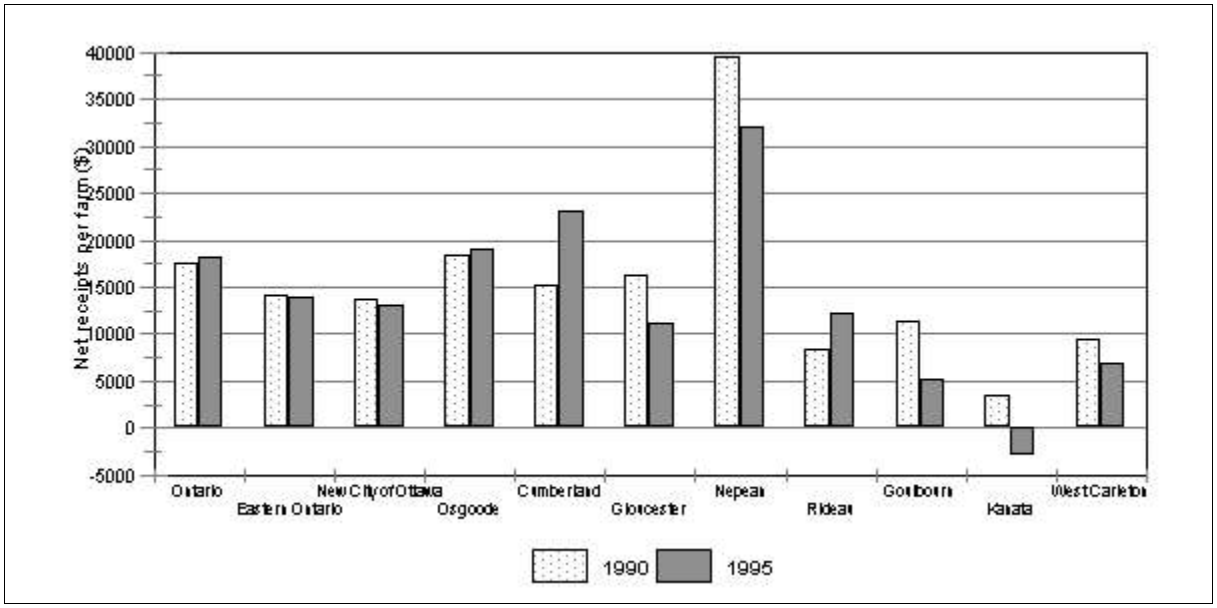
Source: 1991 Statistics Canada, Agricultural Profile of Ontario. ; 1996 Statistics Canada, Agricultural Profile of Ontario.

4.11 Net Farm Receipts per Farm and per Acre of Crop Land

The average value of net receipts for the new City of Ottawa in 1995 was $13,112, down slightly from the 1990 average of $13,772. Nepean had the highest value of net receipts of the municipalities in the study area in 1995. On a per farm basis, net receipts in Nepean amounted to $32,000, greatly exceeding the Eastern Ontario average $13,915 in 1995. The average value of net receipts across Ontario was $18,202 per farm. Net receipts per farm in Cumberland and Osgoode also exceeded the provincial and Eastern Ontario levels at $23,000 and $19,000 respectively (Table 20 and Figure 17). Kanata had a negative figure of -$2,884 in net receipts per farm.

On a per acre basis (crop land), Cumberland ranked highest among the eight municipalities. The value of net receipts per acre of crop land recorded in Cumberland in 1995 exceeded both the Eastern Ontario and provincial averages. Net receipts in Gloucester amounted to $169 per acre of crop land, compared to $119 for Eastern Ontario and $140 for Ontario. Osgoode with $151/acre of crop land was the only other municipality to exceed the provincial and Eastern Ontario averages (Table 20).

Figure 17. Net Receipts per Farm for the New City of Ottawa and its Municipalities, Eastern Ontario and Ontario, 1990 and 1995



Source: 1991 Statistics Canada, Agricultural Profile of Ontario. ; 1996 Statistics Canada, Agricultural Profile of Ontario.

4.12 Farm Operator Age

In 1996, the average age of farm operators in the study area was 50.5 years. This was slightly older than the average age for farm operators in Ontario (49.5 years) and in Eastern Ontario (49.6 years). Farmers in Cumberland were, on average, the youngest, with an average age of 47.9 years. Farmers in Kanata were the oldest, with an average age of 57.8 years. From the national perspective, between 1991 and 1996, the average age of farm operators (male and female) increased approximately one year. Female operators tended to be younger than their male counterparts in 1996, with

an average age of 46.7 years (Statistics Canada, Profile of Canadian Farm Operators, 1996).

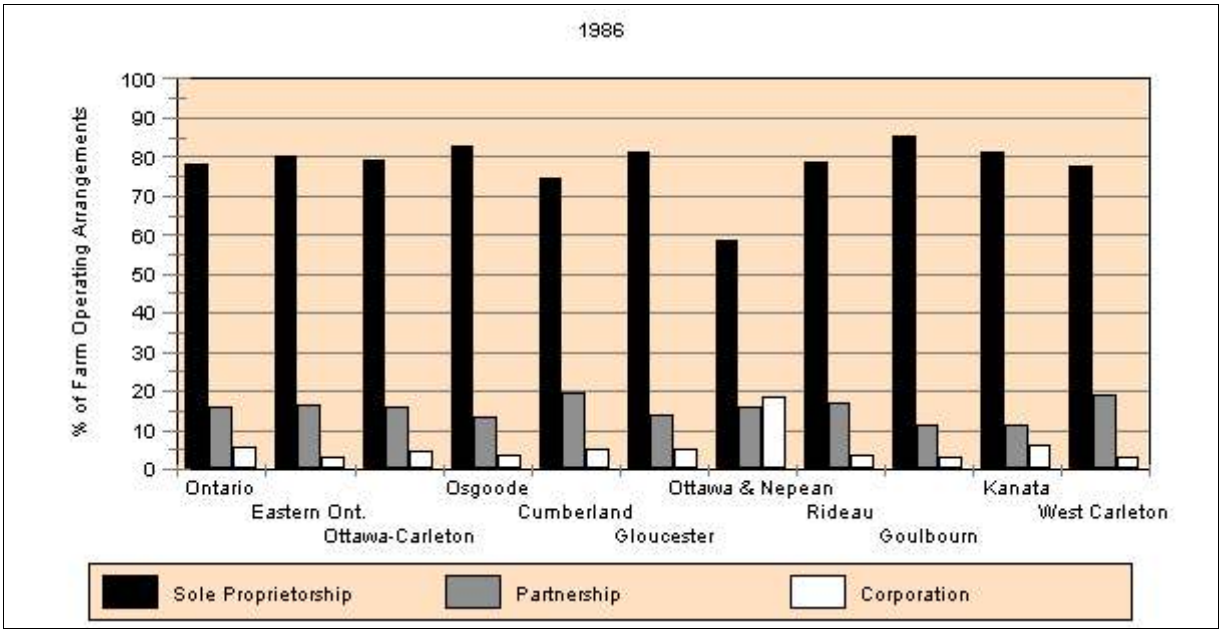
4.13 Farm Operating Arrangements

Farm Operators are those persons who are responsible for the day-to-day management decisions made in the operation of a census farm or agricultural operation. In determining the nature of the farm operating arrangement, the agriculture census questionnaire offers several categories including sole proprietorship, partnership and corporation.[12]

Farm operating arrangements have undergone considerable change in Ontario. In 1986, 78% of all farms in the province were operated as sole proprietorships. By 1996, 57% of all farms were operating as sole proprietorships. Farms are increasingly shifting toward partnership or corporation type arrangements. This trend has been consistent across the province and, as shown in Figure 18 and Figure 19, the study area maintained a similar profile to both the province and the Eastern Ontario region between 1981 and 1996.

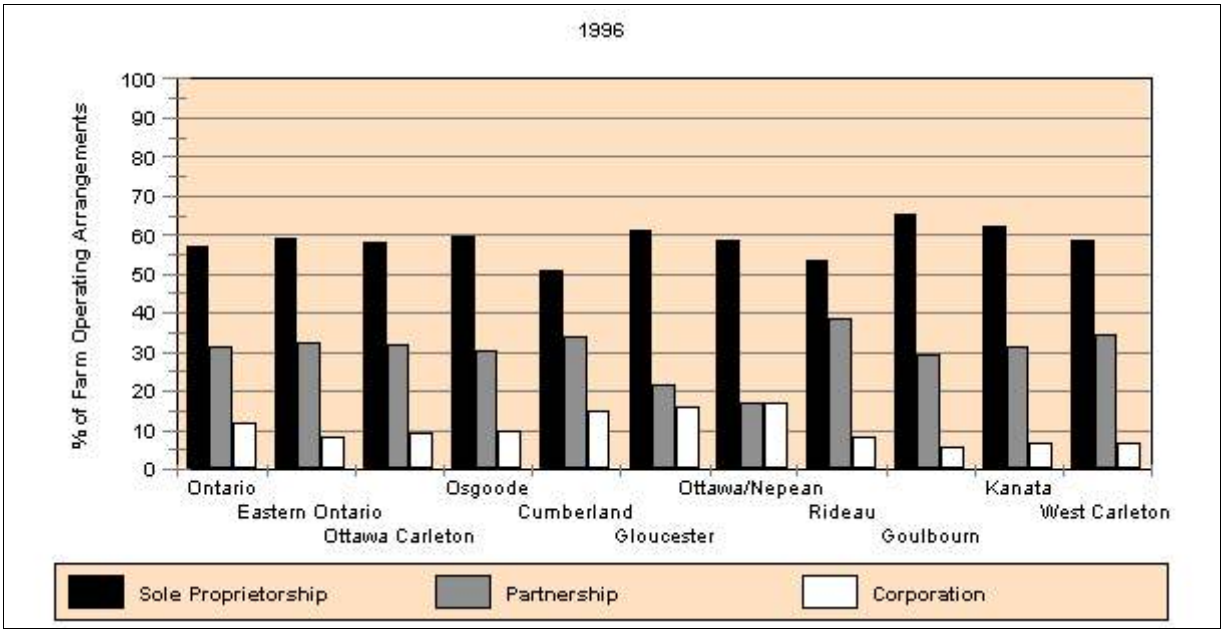
[12] The partnership category refers to an arrangement with or without a written agreement. Corporation can be family held or otherwise. There is also an 'Other' category which includes research farms, community farms/grazing associations, grazing reserves, Hutterite colony, trust or estate. 'Other' farm operating arrangements accounted for 0.66% of all arrangements in the City of Ottawa in 1986 and 0.48% in 1996.

Figure 18. Farm Operator Arrangements for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1986



"Ottawa-Carleton" refers to the new City of Ottawa.
Source: Statistics Canada, 1986 Agricultural Profile of Ontario.

Figure 19. Farm Operator Arrangements for Ontario, Eastern Ontario, the New City of Ottawa and its Municipalities, 1996



"Ottawa Carleton" refers to the new City of Ottawa.
Source: Statistics Canada, 1996 Agriculture Profile of Ontario.

4.14 Summary

Agriculture in the new City of Ottawa is characterized by a variety of production activities. The most prominent types of farming activities are beef, dairy and miscellaneous speciality farms. Hog, poultry, fruit and vegetable farms are small in number, while grain and oilseed farms have declined from 1991 to 1996. Over the years, field crop farms have steadily increased in number in the new City of Ottawa. In general, while dairy and beef farm numbers have declined, the diversity of the local agricultural sector has been enhanced in recent years with the growth of miscellaneous specialty farms (floriculture, Christmas trees, maple syrup production, sod production, mushroom production, etc.) (Table 21).

Farm sizes in the new City of Ottawa are on the rise. From 1991 to 1996, the average farm increased from 186 to 199 acres. This trend is consistent with patterns at the provincial and Eastern Ontario level. Nepean recorded the largest average farm size at 365 acres where a small number of large farms increased the overall average. Almost all of the municipalities in the City of Ottawa experienced growth in average farm size between 1991 and 1996.

The new City of Ottawa had a total of 1,492 farms in 1996. These farms generated $136.7 million in farm gate sales in the fiscal year 1995. Farm gate sales in the new City of Ottawa were by far the highest among the municipalities within Eastern Ontario. The new City of Ottawa is responsible for over 17% of all agricultural sales in the Eastern Ontario region (Table 22).

Table 21. Proportional Distribution of Farms with Sales of $2,500 or more by Farm Type for the New City of Ottawa, 1986, 1991 and 1996

Farm Type	% 1986	% 1991	% 1996
Dairy	26.7	23.6	22.4
Cattle	36.1	34.0	26.4
Hog	1.5	1.0	0.8
Poultry & Egg	1.3	0.5	0.6
Livestock Combination	0.9	2.1	2.3
All Livestock Types	66.5	61.2	52.5
Grain and Oil Seed	11.5	7.0	9.5
Other Field Crops	0.4	3.9	8.8
Fruit	1.9	1.8	2.0
Vegetable	2.9	2.4	3.3
Miscellaneous Spec.	11.8	21.9	21.3
Other Combinations	3.9	1.5	2.4
Total	100.0	100.0	100.0

Source: Statistics Canada

Table 22. Total Farm Numbers, Total Farm Gate Receipts and Percentage of Sales in Eastern Ontario for the Municipalities in Eastern Ontario, Eastern Ontario and Ontario, 1991 and 1996

	Total Farms 1991	Total Farms 1996	Farm Gate Sales ($) 1990	Farm Gate Sales ($) 1995	% of East Ont. Total '95
New City of Ottawa	1,606	1,492	119,366,332	136,734,633	17.48%
Lanark	1,053	1,065	42,723,625	37,505,719	4.79%
Renfrew	1,505	1,532	61,570,044	60,262,541	7.70%
Frontenac	733	823	34,647,560	35,259,412	4.51%
Leeds	856	904	59,178,856	70,869,418	9.06%
Grenville	636	589	35,840,362	33,727,847	4.31%
Lennox & Addington	726	753	41,795,937	43,474,761	5.56%
Prescott	818	759	87,504,684	97,644,766	12.48%
Russell	519	480	54,465,521	52,427,433	6.70%
Stormont	582	559	46,871,278	51,793,626	6.62%
Dundas	804	781	78,959,981	88,114,477	11.26%
Glengarry	817	773	71,061,817	74,518,293	9.53%
Eastern Ontario	10,655	10,510	733,984,007	782,330,940	100.00%
Ontario	68,633	67,557	6,671,452,382	7,760,803,688	

Source: 1991 Statistics Canada. Agricultural Profile of Ontario. Part I. ; 1996 Statistics Canada. Agricultural Profile of Ontario.

5.0 New City of Ottawa Primary Producers Focus Groups

In early October 2000 focus groups were held with primary producers in the new City of Ottawa. A total of thirteen farmers from a variety of farm types and sizes provided the study team with inputs regarding the trends, issues and challenges facing agriculture in the study area. The following section provides the results from these focus groups, organized according to three primary subject areas:

- Trends in farm sizes in the region of the City of Ottawa;
- Ag-related labour force in the City of Ottawa; and
- Linkages with the local business community.

Farmers were also asked to provide inputs as to what they view as issues facing agriculture in general.

5.1 Trends in Farm Sizes in the New City of Ottawa

5.1.1 Defining Farm Size

Farmers elaborated that defining and measuring farm size is subject to scale; relative to local farm sizes, Ontario farms, Canadian or U.S. farms. While farms may be large in the new City of Ottawa, they may be substantially smaller than farms located in other areas.(e.g. U.S. dairy farms). Furthermore, as farms consolidate and become larger, what used to be considered a large farm may now be smaller. They proposed a series of criteria which could be used in defining farm size: number of acres or animal units per farm (or a combination thereof, as the two are related); location of the farm to urban areas; the farm as the farmer's primary source of income and the productivity of farmers (part-time vs. full-time). From these criteria, farmers were able to put forward several definitions of farm sizes in the City of Ottawa. Small farms are part-time farms, with cash crop acreage under 500 acres in size, which are not viable enterprises by themselves. They are not sole or primary source of family income as the main source of income is off-farm. Medium farms are viable one-person operations, of 500 -1,000 acres in size. Large farms are commercial operations employing more than one person, with a total area of 1,000 -2,000 acres, or made up of 150 sows or 200 dairy cows.

Farmers did not include beef or hog farms in their definition as they view beef farms in the City of Ottawa becoming non-existent in the near future, and there have traditionally been few hog operations in the area. The term 'Factory Farm' has little meaning for the farmers in the focus group. They consider the term to be an urban definition of a large farm, with negative connotations, as they do the term 'Intensive Agriculture'. Farmers view factory farms as operations where the commodity goes from initial production to a finished product which is ready for consumers. They view these types of operations as operating on an imbalanced land base and are highly specialized. They are owned by outside

stakeholders, and employ non-local workers.

5.1.2 Current Trends in Agriculture

i) Consolidation Into Larger and More Intensive Farms

Farmers state that farms in the new City of Ottawa are becoming fewer and larger, although this trend has been occurring for quite some time. This observation is consistent with data presented earlier in the report that showed a 25% decline in farm numbers between 1976 and 1996. Farms are also becoming more intensive. Some of the larger operations are undertaking more on-farm enterprises (e.g. dairy farms combined with cash crops). Increasing diversity on these farms means more income, larger farms, and continued future investment in land, equipment and labour to run them. This has been aided by advances in technology, such as genetic improvements in crops and livestock. However, the costs of these inputs are high and beyond the control of the farmers, as are the prices of the commodities they produce.

ii) Decline of the Agricultural Community

As farms become fewer, farmers feel that the agricultural community is also in decline. They state that agriculture and other community infrastructure are now struggling to survive (e.g. hospitals). Farmers fear that the local beef industry is going extinct. High-tech jobs in Ottawa are luring young people away from farm jobs; fewer young people are returning to farms and are faced with expensive startup costs should they want to start farming by themselves. With the increased number of large, multi-national corporations involved in agriculture, much of the control has been removed from local farmers. Furthermore, urbanization is rapidly encroaching on available agricultural lands; pockets of land speculation are making their way westwards from Ottawa (e.g. Kanata). The farmers report that currently the southern portion of the new City of Ottawa has little land speculation, although some urbanites live in agricultural areas which have been severed off of agricultural properties, and serve as bedroom communities for the Capital City.

iii) Prominence of Environmental Issues

Farmers felt that environmental issues have become more prominent, and have resulted in more environmental regulations. Many of these new regulations, however, are viewed as impractical.

iv) Declining Support for Agriculture

Farmers feel that there is, in general, less public and political support for agriculture. The general public remains sceptical of the industry, although many urban people don't realize that their food is produced on farms. Farmers also feel that as the urban population of the new City of Ottawa grows, the percentage of voters from the agricultural community is getting smaller. This has resulted in decreasing political support for agriculture at the local level. On a larger scale, farmers also feel that there is decreasing political support for agriculture at the provincial and federal levels of government.

5.1.3 Issues with Current Trends

i) Loss of Agricultural Land

Farms and agricultural activities are currently in competition with other land uses and will be increasingly so in the future. The loss of agricultural land to developers, and the implications thereof, will limit the opportunities for farm expansions, as well as take valuable agricultural land out of production.

ii) Declining Public Profile of Agriculture

Farmers feel that agriculture is frequently inaccurately represented in the media, which has resulted in decreasing public support for the industry. Farmers realize that it is difficult to re-educate the media, but are of the opinion that the media does want to present positive news whenever possible. Farmers see themselves as a small minority, and they need to work to get the media's attention to increase public awareness and develop support for local agriculture.

iii) Political Will to Support Agriculture

Focus group participants were unanimous in the need for political will and foresight, at the local, provincial and federal levels, to support agriculture. This would enable farmers to provide input to the process of developing and implementing internal agriculture policies. In the new City of Ottawa this need is critical in light of the changing status of farms and agriculture due to the amalgamation of Ottawa-Carleton into the new City of Ottawa.

iv) Environmental Regulations

The increase and practicality of environmental regulations are of concern to farmers. Farmers felt it was important to better educate themselves with regards to the regulations, as well as to embrace bio-technology as a means of making their farms more efficient.

5.2 Agriculture Labour Force in the New City of Ottawa

5.2.1 Farm Labour

Farmers report a variety of sources of farm labour. Most of the work on the farm is conducted by the farmers and their families; full-time employees are few, aside from those on large farms. One farmer reported employing firemen on a part-time basis to work on his farm. Part-time and seasonal workers, mostly high school students, work on farms during the busy period from the end April to early September. Specialized work is usually contracted out to custom workers (e.g. combining, manure spreading, baling, planting, spraying and hoof trimming) or consultants (e.g. food, hydrology and crops), if it is not undertaken by the farmers themselves.

5.2.2 Availability of Qualified Labour

Farmers report difficulty in finding farm workers in the area, let alone quality farm workers. The shortage of labour is largely due to the competition for workers in the growing high-tech sector in Ottawa. The high-tech sector provides less physically demanding employment at good wages; farmers reported that the high-tech sector in Ottawa had 10,000 unfilled jobs. Agricultural wages are poor by comparison. The quality of farm workers is also an important issue; farmers cannot find relief workers for hog and beef farms. In addressing the labour shortage, farmers are attempting to make their farms less labour intensive by investing in technology. This makes agricultural work more expensive; costs have somewhat been reduced through increased cooperation between neighbouring farms and the hiring of custom operators.

5.2.3 Training

Farmers identified a number of skills and training needs required by farm workers. Of utmost importance was finding workers with the right attitude and a willingness to learn. Farmers are satisfied to provide training on the job, especially in terms of equipment operation and maintenance, livestock management (e.g. feed, artificial insemination, basic veterinarian, milking), which could be supported by more formal training from Kemptville College or other recognized institutions. They also recognized the importance of safety training, specifically in terms of machinery, cattle (both of which should involve a formal course) and chemicals (which is attained through OMAFRA and/or OATI). Farmers would also like to see their skills developed further, especially in accounting, business management and public relations training.

5.2.4 Issues with Human Resources and Training

i) Lack of Available Labour

Farmers state that there is a severe lack of farm workers in the new City of Ottawa; the necessary labour pool is not present. The main reason for this is that quality of life issues have coupled with a negative image of farming as a career, rendering farm work undesirable to many young workers. Young people can find easier employment for higher wages in the high-tech sector of Ottawa and environs. This has been compounded by a false assumption by governments that Canadians want to work on farms. Efforts to recruit young Canadians to work on farms have been unsuccessful. An example of this is the failure of EI-based apprenticeship programs to result in on-farm jobs.

ii) Lack of Training Opportunities

Farmers state that there is no suitable training available in many areas; in most cases the owner provides training on the job. Some of the agricultural product manufacturers belonging to multinational companies provide product information sessions, but these have limited value as they contain no training component. However, farmers

value these sessions as a means of acquiring information, although they still rely upon independent advice in using this information to make choices.

iii) Costs

Farmers said that finding time and money to take part in training activities, or to conduct on-farm training, is difficult; farmers are not paid while away from their farm. In many cases they rely upon consultants to conduct training. Farmers find that OATI training courses are expensive and not geared towards farm labour. In terms of finding suitable farm labour, few farmers use the Farm Labour Pool as it is too expensive ($100) and provides poor quality service; farmers must pay even if they don't get workers.

Centralized grant programs geared towards providing funds for summer and student labour are unfair to farmers distant from Guelph (where the program is managed). As the application forms are sent by mail, they arrive in the new City of Ottawa after they have arrived in other areas of the province. By the time Ottawa farmers can submit their requests, funding for the program is usually exhausted.

5.3 Linkages with the Local Business Community

5.3.1 Type of Businesses Dealing with Farmers in the City of Ottawa

i) Buying (inputs)

Farmers report dealing with a number of businesses in purchasing the goods and services necessary to operate their farms. Most of these businesses are local; farmers have developed a sense of trust in their local businesses, which is important to both the farmer and the business. Not all farmers in the new City of Ottawa conduct their business in the same place; Ag-related businesses are scattered throughout the Regional Municipality. Occasionally, farmers will also purchase goods and services from businesses located outside of the study area (e.g. Winchester) as they are closer to their farms and therefore more convenient. The businesses that farmers purchase from are as follows: farm equipment dealers, fertilizers, feed dealers, veterinarians, custom operators, banks, financial planners, accountants, lawyers, wholesale and retail hardware. The locations of businesses where most of these purchases are made are Arnprior, Carp, Kemptville, Richmond, Russell-Embrun, Smiths Falls and Winchester.

ii)Selling (outputs)

Farmers make the majority of their sales outside of the new City of Ottawa. Sales of commodities, and the locations of these sales include: beef (Cookstown, Brussels, Galetta, Guelph, Toronto, and Leo's livestock in Greely), corn (Casco, Prescott elevator and Cardinal), dairy cattle (live cattle and embryos to U.S.), hogs (Quebec), milk (Ottawa, Winchester, and DFO Mississauga), soybeans (Hamilton), wheat (Cambridge and the wheat marketing board in Chatham) and white beans (Thompson, Quatico in Goderich and Milton).

5.3.2 Trends in Agriculture-related Businesses

i) Increased Competition Among Businesses

Farmers have observed that the businesses that they deal with are serving broader, more globalized markets in order to support a larger diversification in crops, newer crops and specialized markets. This has positive and negative effects on farmers in the new City of Ottawa. Some local services, such as welding services, have closed down or have priorities other than farmers. The centralization of many bank branches in rural areas has negative effects on farmers as local branches can no longer make decisions with regards to loans. This is limiting the access of farmers to much-needed capital. Although some consolidation of businesses has occurred (some farm equipment dealers have amalgamated and moved further away), the distance to new, larger businesses from farms is not yet an issue. 'Traditional' Ag-related services, such as co-ops, are still strong in the region, and have expanded product lines and provide fully-integrated services. Due to its central-location, Winchester is ideally-located to serve farmers in Eastern Ontario, and the town has prospered as a result thereof.

Overall, farmers feel that fewer and larger farms have made a more competitive business market. Farmers now have higher expectations of products, service and quality and, for the most part, are getting it. They are dealing directly with dealers, and in many cases are able to 'cut out the middleman'.

ii) Loss of Government Services

The loss of many government services that supported agriculture has resulted in farmers now paying for services that used to be free. Private sector businesses have replaced some government services through the use of consultants and suppliers, where the costs of services have been included in the price of the products.

iii) Greater Access to Information

Farmers have greater access to information. As a result, they are more knowledgeable about what they are purchasing. Farm suppliers are also better informed, and are more knowledgeable about their products and farming in general. Farmers tout the use of technology (e.g. internet and GPS applications), but say the amount of information available is extensive, leading to 'information overload'. Furthermore, the increasing amounts of paperwork generated on the farm takes up a greater amount of their time, and often requires help.

5.3.3 Issues with the Farm and Ag-business Relationship

i) Pricing Control

Farmers stated that their highest priority was the lack of pricing control of inputs and outputs.

ii) Access to Capital

Farmers said that dealing with bankers, especially with regards to accessing capital to operate and expand their farms was the second-highest priority.

iii) Increasing Costs

Farmers said that increases in fuel prices have resulted in rising transport costs, which have increased the price of purchasing inputs and as well as shipping outputs. In some cases, supplies are sold in quantities that are excessive for small farms, and are not cost-effective. With the cutback in government services, OMAFRA is no longer effective. This has added to the costs to farmers as many of the services that used to be free now have to be paid for. Furthermore, the quality of remaining government services has declined. Farmers feel that various government agencies are not sympathetic to farms or small businesses.

iv) Role of information

With the reduced role of OMAFRA, farmers must look for other reliable sources of information on their own. This involves time and money on their part. However, the development of trust in information sources in important, and farmers are willing to invest in it. They feel that professional, independent advice is available, and the information provided by these services is kept accurate and honest by the market.

5.4 Issues Facing Agriculture in General

i) Public Opinion Towards Agriculture

Farmers feel that the overall public perception of farming by Canadians is poor. Locally, they feel that non-farmers view agriculture as a liability in the amalgamation of Ottawa Carleton Regional Municipality into the new City of Ottawa (ie. farmers living off of the city's tax revenue). Societal ties to agriculture need to be re-established and strengthened, notably the important economic role of agriculture in the region of the City of Ottawa.

ii) Political Will to Support Agriculture

Farmers are frustrated by the lack of government support through tough financial times, which is unlike the situation they see in the U.S., Europe and Quebec. Farmers identified the need for a united agricultural voice in Ontario, which could be based on the Quebec model. In order to develop this model, they feel it is important that the Ontario Federation of Agriculture and relevant community groups discuss matters.

iii)Competition with Other Land Uses

Farmers view the competition for available agricultural land with other land uses as a serious issue. Not only do they see urbanization as taking farmland out of production, but it also results in a lack of sufficient land to dispose of waste from farms and the new City of Ottawa.

6.0 Review of Agricultural Related Planning Policy within the New City of Ottawa

6.1 Introduction

The purpose of this section of the report is to review the planning policies in place within the new City of Ottawa that relate to farm ownership and operation. The new City of Ottawa has 12 separate official plans, one for each of the 11 former municipalities and one for the former Region of Ottawa-Carleton (RMOC). The City may amend one or more of these Official Plans as its many areas continue to grow and more communities are built.[13] This review is drawn from the Official Plans of a sample of the municipalities within the new City of Ottawa as well as from the Official Plan of the regional municipality itself. This section will attempt to explain in brief terms how the R.M.O.C. and the municipalities therein intend land zoned for agriculture to be used.

This section of the report will proceed to provide a brief background into the context within which the municipalities of the R.M.O.C. and its municipalities formulated their official plans and addressed agriculture and related issues therein. Policies related to agriculture will then be innumerate under three categories, those that stipulate the types of farming permitted within lands zoned for agricultural use, the restrictions placed upon the severance of lots within agricultural land, as well as the other permitted uses or enterprises allowable on farm lots. A brief conclusion will follow.

The majority of the work that has gone into this review has been summarized in Table 23. The main body of text will reveal the following:

- That the type of farming carried out on agricultural land is generally unrestricted,
- That the severance of farm lots is generally restricted to occasions when the farm is sold by a retiring farmer who does not wish to relocate his or her residence, or, where there is an existing dwelling that is surplus to the operation of the farm, and
- That other permitted uses are generally restricted to Commercial and Industrial uses the operation of which requires it to be in close proximity to agricultural operations.

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[13] Due to certain restraints this section of the report is unable to review the agriculture-related policies of all of the municipalities within the R.M.O.C. Currently many of these municipalities are in the midst of restructuring and/or revamping their official plans. For these reasons, and for the sake of time, this section will review the agriculture-related policy documents that were accessible to the researcher at the time.

The previous points are qualified with the term “generally” in order to account for the slight variations between the different municipalities, but, to be clear reasonably little variation exists between the policies of the municipalities. Much of this variation seems to correlate with the amount of agricultural land present in the municipality, i.e., those municipalities with a greater amount of agricultural land tend to have more specific and definitive policies in place. Although, this too is misleading. As will be noted from time to time certain terms used throughout the official plans review for this section of the report tend to be under defined and difficult to interpret. Certain ambiguities are prevalent and might therefore account for a certain degree of variation in the interpretation of policy presented in this section of the report.

6.2 Background

The official plans of those municipalities from the R.M.O.C. sampled in this section of the report were all approved fairly recently. The earliest plans having been approved in 1996 and the most recent plans having just been approved in mid 2000. The Official Plan for the R.M.O.C. on the other hand was adopted in 1997. All of the official plans contain objectives and policies that are meant to guide council in its management of growth within the region and their respective municipalities. The Official Plan for the R.M.O.C. stipulates that it will remain in place up to the year 2021 at which point it will be updated.

Many of the official plans of the municipalities of the R.M.O.C. reviewed for this section of the report, as well as the region’s official plan cite a notable decline in the agricultural sector of their municipality’s/region’s economy, citing the 1986 agricultural census. The R.M.O.C. Official Plan states, “[h]ome-based employment will also increase, and in rural areas this may compensate for the anticipated decline in farming and other primary activities.” (Regional Municipality of Ottawa-Carleton Official Plan 1997, pp. 53.) This quote is indicative of the sentiment conveyed by all the official plans reviewed for this section of the report. It is apparent that the agricultural industry is waning and as a result agricultural lands are at risk of being lost to other endeavors that are viewed as more economically viable such as residential development. Agriculturally tenable lands are therefore felt to be at a premium. For this reason the Official Plan for the R.M.O.C., and the other municipalities in general, devote a great deal of its energies towards the protection of agricultural lands. This is done through conservation policy, zoning laws, and severance restrictions. This is the context within which the official plans for the municipalities of the R.M.O.C. as well as the official plan for the region itself were formulated.

6.3 Types of Farming Permitted

The Official Plan for R.M.O.C. defines agricultural uses as "[t]he growing of crops, including nursery and horticultural crops; raising of livestock and other animals for food, or fur, including poultry and fish; aquaculture; agro-forestry; maple syrup production; and associated on-farm buildings and structures." (R.M.O.C. Official Plan, pp. I of the glossary) Although the plan states that 121,000 hectares of land out of 276,000 (43.9%) is occupied with such uses relatively little emphasis is placed upon agriculture's role in economic development within the region. This may be due to the reasons expressed above regarding the perceived decline in the agriculture industry.

Of the five total municipalities sampled in this review three have significant areas of land zoned for agricultural uses, none of which impose restrictions upon the type of farming permitted on those lands (see appendix 1). In all of these cases "agricultural uses" are defined as the growing of crops, the raising of livestock and/or fish, maintaining nurseries, market gardens, kennels and apiaries, engaging in forestry, or growing sod with the exception of the official plan of the City of Cumberland that define what it intends in its use of the term "agricultural uses." For the purposes of this report it was understood that the term "agricultural uses" was meant to refer to the same uses referred to by the term in the other official plans of the R.M.O.C.

In light of the flexibility of this policy protection of agricultural lands against any wrongful or inappropriate usage of it is ensured given that all the municipalities' official plans dictate that farming be carried out in accordance with the *Agricultural Code of Practice*. This document is meant to ensure the optimal uses of agricultural lands by stipulating what soil properties are conducive to any particular type of farming. The *Agricultural Code of Practice* also sets out the appropriate behaviour for operating a farm. Another important component of the *Agricultural Code of Practice* is that it lays out minimum distance separation provisions that all farm owners and operators must abide by. For specific information regarding the minimum distance separation provisions please see the document itself, but, for the purposes of this review it is important to note that these provisions are in place to ensure that allowances are made to ensure that farms are themselves developed in such a manner that guarantees that lands are laid out to accommodate proper drainage facilities, mineral waste management, and other essential amenities. All farms must abide by these provisions and again this is attested to in the official plans, as they make explicit that development must comply with such provisions.

6.4 Restrictions upon the Severance of Agricultural Lots

As mentioned at the outset of this section of the report the protection of agriculturally tenable lands is one of the central purposes for which the official plans reviewed for this section of the report were formulated. To this end the R.M.O.C. Official Plan outlines certain restrictions to non-agriculture related development that may occur in or around land zoned for agricultural uses. Firstly, the plan requires that studies are undertaken to justify any amendment to village boundaries that encroach upon agricultural. These studies must take into considerations alternatives to using agricultural land and also consider the viability of restricting boundary amendments to areas within agricultural land with poor soil (R.M.O.C. Official Plan, 44-45). The plan also requires that council consider the impacts upon agricultural resources before accepting of proposed economic developments within areas adjacent to agricultural lands (R.M.O.C. Official Plan, pp. 51).

In a further effort to conserve agricultural lands the R.M.O.C. Official plan encourages council to support initiatives of the Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.), other provincial ministries, farming organizations, Conservation Authorities and others that seek the improvement of land management and soil conservation (R.M.O.C. Official Plan, pp. 70). Council is also encouraged to support land stewardship in a variety of ways.

Within the municipalities of the R.M.O.C. initiatives for the preservation of agricultural lands take the form of restrictions upon the severance of agricultural lots. In general it can be understood that the severance of agricultural lots is frowned upon by the municipalities of the R.M.O.C. This is so given that any severance is seen as a possible detraction from the capacity of the land to support agriculture and a threat to the agricultural lands in general. Maintaining the size of the lots is important and seen as integral to its ability to support fertile, and economically viable farms.

To this end all of the official plans addressed by this review of municipalities having agricultural lands within their borders encourage retiring farmers to use life-long leases as a means of staying in their homes. Only upon the sale of the farm will any of the municipalities consider creating a second lot to accommodate the retiring farmer's dwelling.

Within the majority of the municipalities additional dwellings for the purpose of housing children of the farmer and full-time employees of the farm are permitted on the farm lot. These dwellings may take the form of permanent structures (houses) as well as mobile homes or trailers. But none of the official plans for these municipalities allow for the creation of a separate lot for such dwellings (see Table 23).

6.5 Other Permitted Uses

Recall from the previous section that the Official Plan for the R.M.O.C. defines agricultural uses as "[t]he growing of crops, including nursery and horticultural crops; raising of livestock and other animals for food, or fur, including poultry and fish; aquaculture; agro-forestry; maple syrup production; and associated on-farm buildings and structures." (R.M.O.C. Official Plan, pp. I of the glossary) This definition is elaborated upon in a section of the R.M.O.C. Official Plan entitled "Agricultural Resource Areas." In this section it is stipulated that in addition to those uses covered by the term "agricultural uses" it is also permitted within these areas to operate home industries. Small-scale industrial and commercial enterprises are also permitted provided that they are directly related to the agricultural industry. Gate sales then are permissible, but only at the regional level. All of these secondary uses are permitted on agricultural land so long as they do not interfere with the primary operation of the farm.

On the other hand the municipalities within the R.M.O.C. are not necessarily obliged to allow all the uses permitted by the R.M.O.C. In other words the uses permitted by the regional official plan are still subject to approval by the official plan that has jurisdiction over the particular agricultural lot in question. It is clear, in fact, from the official plans of the particular municipalities reviewed for this section of the report that only one of the four municipalities allows all of the uses permitted by the Official Plan of the R.M.O.C. That municipality being the township of Gloucester that has very little agricultural lands and is dominated by suburban development.

The City of Cumberland, and the Townships of Osgoode and Rideau, on the other hand permitted farm owners and operators to engage in "Home Occupations" or "Home Industries." These occupations or industries are defined in the City of Cumberland Rural Official Plan as "uses that produce value-added agriculture products…"(City of Cumberland Rural Official Plan, Section 7.2) All of the official plans for municipalities within the R.M.O.C. that contain agricultural lands that were reviewed in this section of the report (see appendix 1), permit "commercial" and "industrial" uses on agricultural lands. All of these municipalities, in their official plans, qualify this permission by stating that only commercial and industrial uses that require their being in close proximity to agricultural operations shall be permitted.

6.6 Conclusion

In conclusion it is important to reiterate that none of the official plans reviewed in this section of the report, four of the five municipalities that have agricultural lands within their borders, impose no restrictions upon the types of farming permitted. Again, the official plans reviewed in this section of the report generally do not permit the severance of farm lots. Allowances though are made for the severance of farm lots in cases where a retiring farmer is selling his or her farm and does not wish to relocate his or her residence.

Allowances are also made to sever lots with existing dwellings that are surplus to the farm operation. Further, in general the official plans reviewed for this section of the report restrict other permitted uses on agricultural lands to commercial and industrial uses that require their being in close proximity to farm operations. Finally, it should also be noted that in many cases the terms used in the Official Plan of the R.M.O.C. and the municipalities therein are unfortunately under defined. For example, terms such as "home occupations", "home industries", "commercial uses related to agriculture", and "industrial uses related to agriculture" appear in the text without further explanation. In some cases this made it difficult to formulate a substantial review of policies containing such terms. It is the hope of this reviewer that this can be rectified in the future as the municipalities of the Regional Municipality of Ottawa-Carleton reformulate their official plans.

Table 23. Permitted Land Uses for the New City of Ottawa - Selected Municipalities

	Cumberland	Osgoode	Rideau	Gloucester	Ottawa
Farmlands present in municipality?	Yes	Yes	Yes	Yes, very little	No
TYPES OF FARMING PERMITTED					
Crops	✔	✔	✔	✔	
Livestock	✔	✔	✔	✔	
Fish	✔	✔	✔	✔	
Nurseries	✔	✔	✔	✔	
Market Gardens	✔	✔	✔	✔	
Kennels	✔	✔	✔	✔	
Apiaries	✔	✔	✔	✔	
Forestry	✔	✔	✔	✔	
Sod	✔	✔	✔	✔	
ACCEPTABLE CONDITIONS FOR SEVERANCE					
For Retirement					
For Retirement upon sale of farm	✔	✔	✔		
For Child	✔*	✔*	✔*		
For Workers	✔*	✔*	✔*		
For existing surplus dwelling	✔	✔	✔		
OTHER PERMITTED USES					
Home Occupations				✔	
Home industries				✔	
Commercial	✔	✔	✔	✔	
Industrial	✔	✔	✔	✔	
Gate sales				✔	
Agri-tourism				✔	

LEGEND: ✔=Permitted, *=Dwelling is permitted without severance, ■=N/A

7.0 Economic Impact Analysis: An Overview

Economic impact analysis studies are aimed at identifying "...changes in a local economy resulting from a stimulus (positive or negative) to a particular segment of the economy' (Davis, 1990, p.5). These studies are often based on one of several standard methodologies of regional analysis: economic base analysis and input-output analysis (Faas, 1980, p.4). Economic impact is generally a measure of the impact of a sector or a project on all sectors of the economy. In this study, total economic impact refers to the sum of direct, indirect, and induced impacts. Direct impacts in terms of employment and sales were measured in earlier sections of the report. The indirect and induced impacts of agriculture will be examined in the following sections of the report.

7.1 Input-Output Analysis

Input-Output (IO) analysis is used to measure the inter-relationships between economic activities at the sectoral, national and regional levels. Linkages are expressed by estimating the sales (outputs) from a given sector to all other sectors in the economy, and by estimating the inputs from all other sectors to a specific sector. What makes the I-O model so useful is the comprehensiveness of the model which disaggregates the economy into individual sectors (Josling, 1966, p.5). Disaggregation permits analysis at the sectoral level, providing researchers with a close-up view of the economy. This analysis allows the researcher to assess where each sector purchases its inputs and sells its outputs. Such analysis is invaluable in identifying what investment will provide the greatest impact on an economy (Poole et al., 1994, p.30).

The I-O model estimates the movement of expenditures through the economy. This is traced through four different levels of expenditure: intermediate and primary suppliers, and intermediate and primary purchasers (Bendavid-Val, 1991, p.88). Suppliers - intermediate and primary - purchase inputs for processing into outputs. Purchasers - intermediate and primary - buy outputs from suppliers and either use them to manufacture a product, or sell them as a final product (Bendavid-Val, 1991, p.88).

Input-Output analysis has two main approaches. One allows the estimation of only the direct and indirect effects of a sector. The other estimates these, as well as the induced effects of a sector. The 'open' model is used to trace the flow of variables between sectors of the economy (i.e. direct and indirect expenditures). The open model does not measure induced spending in the economy; meaning expenditures by employees on food, services and other household expenses (Davis, 1990, p.59). The 'closed' model is used to measure all aspects of the economy; including the direct, indirect and induced effects. Treating the household sector as a producer that sells labour to other purchasing sectors, assesses induced effects (Davis, 1990, p.59).

There are several problems associated with the I-O model. The first is that it is time-specific. In other words, it takes a snapshot of the economy at a point in time . This model cannot account for changes in product demand or input costs, or for the introduction of new technology into the industrial sector (Davis, 1990, p.62). Thus, the I-O model does not adjust for the changing nature of the economy. A second problem of the I-O model is the cost and time needed for the construction of the tables associated with this analysis. Thirdly, input-output analysis requires accurate estimates of movements across borders. This data is typically only available at the provincial or national level. For this reason, the analysis for this study has been carried out using a survey based "input-output-like" approach.

7.2 Economic Base Approach

Economic base theory maintains that economic growth is only possible if the economy's exports grow (Bradfield, 1988, p.38). The theory is based on the belief that as exporting industries expand their sales, there will be an increasing demand for inputs locally which will consequently drive local economic growth (Bradfield , 1988, p.39). In economic base theory, the economy is classified into two sectors of basic and non-basic. The non-basic sector is economic activity with the final sales remaining inside the region (Davis, 1990, p.10). These are support industries that provide everything from industrial inputs to houses for basic sector employees (Higgins and Savoie, 1995, p.66). The exporting industries are identified as basic sectors while all other industries are classified as non-basic.

According to economic base theory, exports are the engine of the local economy. It follows then, that the export of goods supports all other aspects of the economy (Bendavid-Val, 1991, p.77). Export base theory and its supporters carry the separation of basic and non-basic sectors to the point where they attempt to predict the relative impact of the basic sector on the non-basic sector. The prediction of economic impact is assessed through two economic indicators known as the economic base ratio and economic base multiplier. Economic base theory has been refined to the point where it can be questioned: "[W]hat is the overall gain in employment or income in the region associated with each gain in export sales?" (Bendavid-Val, 1991, p.78).

The question is answered through the economic base ratio indicator and the base multiplier indicator (Bendavid-Val, 1991, p.78). The economic base ratio calculates jobs that are theoretically created from one additional job in the basic sector. The economic base ratio is the ratio between employment in the basic and non-basic sectors and is supported by the idea that the combination of basic employment and non-basic employment equals total employment (Bendavid-Val, 191, p.78). The economic base multiplier is the ratio of total employment to basic employment and indicates how many jobs in total are provided for each basic job. Thus, the economic base multiplier is the total sum of the jobs created in both sectors from one job in the basic sector (Bendavid-Val,

1991, p.78). The economic base method is used in this study to estimate jobs in the service sector related to agriculture.

7.3 Multipliers

Given the previous discussion of the input-output analysis and economic base analysis, the reader may question where the application of the two models leads. One of the best uses is that they allow the analyst to identify the impacts of economic changes or shocks to a system. Essentially, these models measure the multiplier effects that result from a change in an economic system. In short, multiplier effects are the summation of the direct, indirect and induced impacts of economic activity presented in a single number (Lewis et al., 1979, p.1). Therefore, an economic multiplier can be used to estimate the impact of change in one variable (for example, the value of agriculture production) on another variable (for example, the value of non-agriculture production). Direct employment and production in the agriculture sector will affect the rest of the economy by supporting employment in related industries as well as in the retail sector. In this way, "... a multiplication of transactions occurs in the economy by people re-spending money" Van Hoeve, 1995, p.66). The multipliers calculated for this research include a sales expenditure multiplier and an employment multiplier.

8.0 New City of Ottawa Study Methodology

The economic impact of agriculture in the new City fo Ottawa was measured through an accounting of the total sales and employment of agriculture and agriculture related businesses in the study area. This work involved a review of the primary data from Statistics Canada's 1996 Population Census of Canada and 1996 Agriculture Census to study the direct economic impacts of agriculture on the economy of the study area. A survey-based 'input-output-like' approach was used to measure the indirect impacts. The survey was aimed at businesses that sell products to, or buy products from, the farmer. The induced economic and employment impacts of the agriculture sector were also studied using primary data derived from the Statistics Canada census data.

8.1 Direct Impact Methodology

Data were taken from the 1996 Population Census of Canada and the 1996 Agriculture Census and yielded information on the economy of the study area and the individual urban centres and townships that make up the new City of Ottawa. Where appropriate, data from earlier censuses were incorporated to examine long-term trends in employment and sales in the study area. For the purposes of this study, 'direct impacts' are the jobs and sales generated 'on the farm', the farm gate sales and farm jobs.

8.2 Indirect Impact Methodology

For the purposes of this study, indirect impacts are jobs and sales generated 'off the farm' by businesses which interact with farm operations through buying and selling products and services. It should be noted that 'related to agriculture' includes only those businesses that buy from or sell to the farm business or agri-related business; sales to farm families for personal consumption are excluded from the indirect impact, but are included later in the analysis under 'induced impacts'.

The research method used to measure the indirect impacts was a survey-based 'input-output' approach. This was completed through a telephone survey conducted from early September to mid October 2000. The method and survey format was originally developed for use in a similar economic impact study conducted in Huron County in 1996 (Cummings, Morris and McLennan, 1998). Minor revisions were made to the methodology through successive agri-impact studies completed in Prescott, Russell, Stormont, Dundas and Glengarry Counties in Eastern Ontario in 1998 (Cummings and Deschamps, 1999), Simcoe County in 1999 (Cummings and Associates, 1999) Lambton County in 1999 (Cummings and Associates, 2000), and Perth County in 1999 (Cummings and Associates, 2000). The method was designed to identify the value of gross sales and the jobs produced by a sample of businesses related to agriculture. From this sample, an estimate was produced for the total population of agri-related businesses in the study area. This in turn provided an estimate of the economic impact of these agri-related

businesses in the study area through indirect employment and sales.

8.2.1 Development of the Business Inventory and Survey Sample

The survey was based on a random sample of local agri-related businesses. A list of agri-related businesses was developed by collecting lists from a number of sources in the area: representatives with local Federation of Agriculture affiliates, Municipal Offices, Chambers of Commerce, Economic Development Offices, and the Yellow pages.

The original list of businesses for the new City of Ottawa was pared down to 977 by eliminating businesses that were either out of business, double listed, located outside the study area or were not likely 'related to agriculture' (professional sports teams, childcare centres, etc.). In order to attain a 95% confidence level for the 977 businesses in the inventory a sample size of 276 was selected at random from the adjusted inventory. As 80 of the first 200 contacts did not have business ties to agriculture[14] or had very minimal ties to agriculture (less than 1% of total gross sales), it was determined that 40% of the businesses in the adjusted inventory had no connections to agriculture. The inventory was adjusted accordingly to reach a final estimate of 586 total agri-related businesses in the study area, with a sample size of 231 required for a 95% confidence level.

In total, 231 businesses were surveyed, 230 businesses provided employment data while 227 provided sales data. During the course of the telephone survey, respondents were asked to provide information regarding the total value of sales and employment figures for their business. They were also asked to estimate the percentage of sales related to the agriculture sector.

8.2.2 Total Gross Sales for the Businesses Surveyed

Total gross sales for the businesses surveyed include sales related and unrelated to the agriculture sector. The sample includes agri-related businesses that sell to and buy products from agriculture, but they may also sell to, and buy from other sectors of the economy. For the 227 businesses that provided sales data, a total of $277,861,500 in gross sales were reported.

[14] Includes excavation firms, accounting firms, auto parts store, computer store, cartage firm, electrical contractors, etc.

8.2.3 Agriculture-related Sales for the Businesses Surveyed

As part of the telephone survey, respondents were asked to estimate the percentage of their sales that were related to agriculture, either by providing products and/or services to farm businesses, or by purchasing products of agricultural origin. The survey determined that $102,822,000 or 37% of total gross sales from the businesses surveyed, were related to agriculture. The share of agri-related sales for the new City of Ottawa region is similar to the findings for the combined Counties of Frontenac, Lennox & Addington, and Leeds & Grenville (37.8% of total sales related to agriculture), Simcoe County (39.7%), Huron County (40.2%) and the combined Counties of Prescott, Russell, Stormont, Dundas & Glengarry (42.1%).

The businesses were asked to estimate the percentage of agriculture sales made within the study area, within Ontario (excluding the new City of Ottawa), within Canada (excluding Ontario) and outside of Canada. As shown in the following table, the value of agri-related 'exports' beyond the borders of the study area represent approximately 36.2% of the total agri-related sales for the surveyed businesses. Almost all of this export activity (36.1%) occurs with other regions of Ontario while sales to other provinces of Canada account for less than 1% of all export sales. There were no sales reported for markets outside Canada.

Table 24. Total Agriculture Sales and Location of Sales for the Businesses Surveyed

Sales for Surveyed Agri-related Businesses (n = 227)	Agri-related Sales	Percentage
Sales in the Study Area	$65,526,000	63.7
Sales in Other Ontario Counties	$37,167,000	36.1
Sales inside Canada (excluding Ontario)	$129,000	0.12
Total	$102,822,000	100

Source: 2000 Ag-business Survey

8.2.4 Total Gross Sales for Study Areas' Agri-related Businesses

From the sample, we can estimate the total gross sales of all agri-related businesses in the study area. This includes sales both related and unrelated to agriculture. We have already established that there are approximately 586 agri-related businesses in the study area; a total of 227 of these provided sales data. This represents 38.7% of the total number of agri-related businesses (228/586 X 100). By dividing the total estimated number of businesses (586) by the total number of businesses surveyed (227), a sampling multiplier of 2.58 can be used to calculate the total gross sales for all agri-related

businesses in the new City of Ottawa. Thus, the estimate of total gross sales for all agri-related businesses in the study area is $716,882,000.

It should be noted that sales data from financial institutions, such as banks and credit unions, were collected somewhat differently. Typically, these sales would be based on profits generated from loans and services provided to farm businesses. However, this information is difficult to obtain. A conservative estimate is that revenue from farm businesses would at least cover the salaries of employees providing services to farmers. Therefore, for the purposes of this study, 'sales' by financial institutions were based on the number of employees at the institution multiplied by an average salary of $35,000, a conservative estimate.

8.2.5 Agri-related Sales for all Agri-related Businesses in the New City of Ottawa

Total agri-related sales for the study area can be derived by using estimates of the agri-related sales generated by the businesses surveyed. Using the sampling multiplier presented above an estimate can be made for the agri-related sales of all agri-related businesses in the new City of Ottawa. In total, agri-related businesses located in the study area generated an estimated $265.3 million in agri-related sales (2.58 x $102.8 million).

8.2.6 Location of Total Agri-related Sales for all Agri-related Businesses in the New City of Ottawa

Using the sampling multiplier of 2.58, we can provide an estimate of the total agri-related sales by location of the sale. Accordingly, $172.5 million in total agri-related sales were generated within the study area. The total agri-related sales generated outside the study area, but remaining within Ontario amounted to $95.5 million. Agri-related sales generated outside of Ontario but within Canada are estimated at $330,000.

Table 25. Total Value of Agriculture Sales and Location of Sales for all Agri-related Businesses in the New City of Ottawa

Sales for All Agri-related Businesses in the Study Area	Agri-related Sales of Survey Sample	Sampling Multiplier	Agri-related Sales for all Study Area Agri-related Businesses
Sales in the Study Area	$65,526,000	2.58	$169,057,080
Sales in Other Ontario Counties	$37,167,000	2.58	$95,890,860
Sales inside Canada (excl. Ont.)	$129,000	2.58	$332,820
Total	$102,822,000		$265,280,760

Source: 2000 Ag-business Survey

8.2.7 Number of Full-time Equivalent Employees Working at the Businesses Surveyed

The study separated employees of the agri-related businesses into two categories. The first category being that portion of the workforce that was active in providing goods and/or services for the agriculture sector and the second being the portion that was not active in serving the agriculture sector. For example, a veterinary clinic may have four veterinarians specializing in large animals (agri-related employees) and two veterinarians specializing in small 'companion' animals (unrelated to the agriculture sector). Data was collected on the total number of full-time, part-time and seasonal employees and hours of work at the agri-related business. These numbers were then converted to a figure representing the total number of Full Time Equivalent (FTE) jobs at that agri-related business based on a 1,875 hours per year workload (7.5 hours per day X 5 days per week X 50 weeks per year).

In total, 230 businesses provided employment data. The total number of employees at these businesses was 2,294 comprised of 1,275 full-time employees, 637 part-time employees, and 382 seasonal employees. Based on the hours and weeks worked over the course of a year, and using the FTE calculation as shown above, the estimate for the total number of FTE jobs at the businesses surveyed is 2,000. This total reflects all work activities (both agri-related and non agri-related) at the businesses surveyed. For the 230 businesses surveyed, 20.5%, or 411 FTE jobs were related to agriculture.

8.2.8 Number of Full-time Equivalent Employees Working in Agri-related Businesses in the New City of Ottawa

The total number of FTE jobs for all agri-related businesses in the study area, as well as the portion of FTE jobs that serve the agriculture sector can be derived from the sample. The number of respondents that provided employment data (230) was divided into the estimate of the total number of agri-related businesses in the study area (586), resulting in a multiplier of 2.55. From these values, the total number of FTE jobs for all agri-related businesses in the study area can be estimated at 5,100. Of these, the number of FTE jobs serving the agriculture sector can be estimated at 1,045 (5,100 x 20.5%).

8.3 Induced Impact Methodology

An examination of the induced effects of agriculture was conducted. Induced employment refers to jobs in Education, Health and Social Services and Government Service sectors. Population Census (1996) employment data from agriculture and manufacturing sectors were compared to service sector jobs in the three sectors mentioned above to estimate the number of induced jobs for the study area. Details of the induced impacts are presented in a later section of the report.

9.0 Results

9.1 Introduction to the New City of Ottawa Results

The aim of this chapter is to present the results of the study, including findings concerning the direct, indirect and induced impacts of agriculture and agri-related businesses on the economy of the new City of Ottawa. This chapter includes findings of an in-depth examination of the backward and forward linkages of agri-related businesses.

This research focuses on the economic impact of the agriculture sector and, more specifically, agri-related businesses in the new City of Ottawa. Both primary and secondary data collection were undertaken; the primary research collection was an 'input-output-like' survey approach of agri-related businesses in the study area. Further calculations of the induced and direct impacts were completed, based on Population Census of Canada data and, to some extent, on multipliers from previous studies (Cummings et al., 1998). The final analysis of the data shows that the agriculture sector continues to be very important to the new City of Ottawa.

The study aimed to identify the total economic impact of the agriculture sector in the new City of Ottawa. While published data indicate that the agriculture sector generates substantial farm gate sales, there was no evidence to prove the actual impact of the agricultural sector. To provide a clearer picture of the indirect economic impact of the study area's agriculture sector, the 'input-output like' methodology was applied.

9.2 Direct, Indirect and Induced Impact Results

9.2.1 Estimated Direct Sales and Jobs

Direct impacts refer to the value of sales and number of jobs created by the agriculture sector in the study area. Direct sales are equivalent to the value of farm gate sales. As noted in an earlier section of the report, the agriculture sector in the new City of Ottawa supported 3,510 agricultural jobs in 1996 and generated $136.7 million in farm gate sales in 1995. The following table provides a description of specific aspects of the direct impact of agriculture in the new City of Ottawa.

Table 26. The New City of Ottawa in Provincial Perspective, 1996

Selected Attributes	Ontario	Eastern Ontario Region	City of Ottawa
Number of farms	67,520	10,473	1,492
Average farm size (acres)	206	239	199
Average area under crops per farm (acres)	128	117	117
Crop land as a % of farm land (%)	63.1	49.1	59
Gross farm receipts per farm ($)	114,878	74,437	91,645
Gross farm receipts per acre of farm land ($)	559	313	461
Net farm income per farm ($) [a]	18,202	13,915	13,112
Total expenses as a % of total gross farm receipts (%)	84.1	81.3	85.7

[a] Net farm income per farm is derived by subtracting total expenses from gross farm receipts and dividing by the number of farms.

As noted earlier, the new City of Ottawa is distinct in that it features a large agricultural base surrounding the urban core. Indeed, the agricultural sector in the new City of Ottawa is substantially larger than agricultural sectors found in other major Canadian cities. As shown in Table 27, the new City of Ottawa generates more in farm gate sales than the cities of Toronto, Montreal, Vancouver, Edmonton and Calgary put together.

Table 27. New City of Ottawa compared to other Canadian cities.

City	Total number of farms	Total area of farm land (acres)	Total farm gate receipts (1995 - $ million)
Ottawa	1492	296807	136.7
Montreal	86	9357	49.1
Edmonton	233	72504	45.7
Toronto [a]	139	23079	30.2
Winnipeg	131	22081	16.1
Calgary	126	45834	9.5
Vancouver	22	282	3

[a] Statistics Canada reported 42 farms in Toronto in 1996. For reasons of confidentiality, Toronto was amalgamated with the municipality of Vaughan for a total of 139 farms.

9.2.2 Estimated Indirect Sales and Jobs

The indirect impacts of agriculture refer to the value of sales and the number of jobs created by agriculture-related businesses in the new City of Ottawa. An agri-related business is defined here as any business which sells to, or buys from, the agriculture sector. The study found that the indirect impacts created by these businesses is substantial.

9.2.2.1 Location of Agri-related Businesses in the Survey

Agriculture-related businesses are located in rural areas, villages, towns and cities across the study area. Greater representation is found in cities such as Ottawa, Nepean and Gloucester, and in smaller communities such as Kinburn, Stittsville, Osgoode, Carp and Vernon. Almost 90% of the agri-related businesses surveyed have just one business location. Approximately 5% of the businesses surveyed have business outlets located outside the study area.

9.2.2.2 Characteristics of the Businesses Surveyed

The common characteristic of all the businesses surveyed is that they deal in some way with the agriculture sector. More specifically, all of the businesses surveyed either sell products or services to, and/or buy products or services from agriculture producers. It is important to note that these agri-related businesses may also conduct trade with other sectors of the economy.

For the purposes of this study, the surveyed businesses were categorized according to their primary activity, using the Standard Industrial Classification code (SIC) as used by Statistics Canada. This classification system separates Canadian businesses into 18 divisions or sectors such as Manufacturing, Retail Trade, and Agriculture and Related Service Industries. Employment data for all 18 sectors in the study area for 1991 and 1996 were presented earlier in the report.

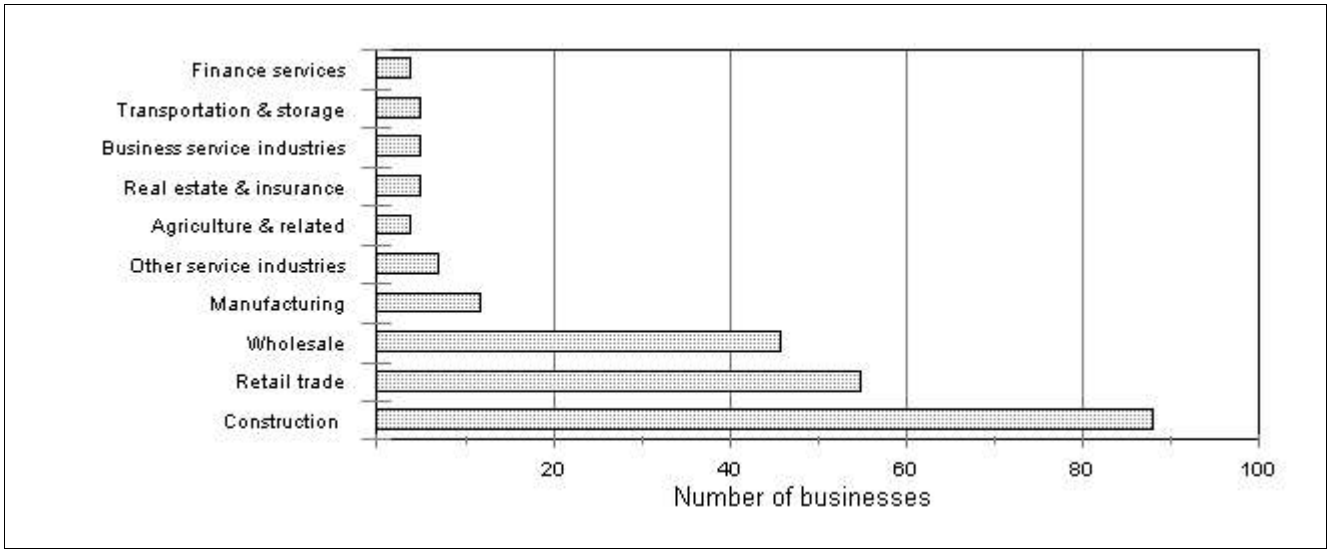
During the agri-related business survey, businesses from three industrial sectors (Education, Health and Social Services, and Government Services) were deliberately omitted from the survey as their impacts are being considered under induced impacts, leaving 15 possible sectors with which the study area's agri-related businesses could form links.

As shown in Figure 20, the survey included businesses from ten different industrial sectors. This suggests that the agriculture sector has links with almost every sector of the study area economy. Connections were found with the following sectors: Construction, Retail Trade, Wholesale Trade, Manufacturing, Real Estate and Insurance, Business Services, and Finance. Linkages were also found among businesses classified as

Agriculture and Related Service Industries.

The survey did not include businesses from several sectors including Fishing and Trapping Industries, Mining, Accommodation, Food and Beverage Industries, and Communication Industries. This does not mean that these industries do not exist in the study area; they may not be directly linked to agriculture, or may not have had enough local representation to be picked up by the survey sample.

Figure 20. Business Response Rate by Industrial Sector



Source: 2000 ag-business survey

Some of the industries analyzed in the study appear to have stronger linkages with the agriculture sector. Industries with a high degree of representation in the survey included Construction (88 of the businesses surveyed), Retail Trade (55) and Wholesale Trade (46). Characteristics of the businesses surveyed in various industrial sectors of the study area economy are discussed below.

i) *Agriculture and Related Service Industries*

The study found that strong linkages exist between businesses within the agriculture sector. Most often, backward linkages are in the form of services provided to farms such as veterinary services and custom farming and crop consulting services. In total, four businesses were interviewed from the Agriculture and Related Services Sector. A typical example is March Road Veterinary Clinic which provides large animal vet services.

ii) *Manufacturing Industries*

A variety of products linked to the agriculture sector are manufactured by businesses in the study area. In total, 12 businesses from the sector were interviewed. Backward linkages to agriculture exist through the sale of such products as concrete, and building and fencing materials. A significant forward linkage involves the manufacturing/processing of food products from agricultural goods. As revealed in the survey, custom meat processing/packing is a common type of forward linkage in the study area. An example of such an industry is Country Meat Kitchen which custom slaughters hogs.

iii) *Construction Industries*

Eighty-eight businesses from the construction sector were surveyed. These businesses have backward linkages to agriculture through electrical contracting, plumbing and heating contracting, concrete forming, well drilling and excavating. One example of a drilling business in the study area is Stanton Drilling Inc.

iv) *Transportation & Storage Industries*

Five businesses from the transportation sector were included in the survey. These businesses have backward linkages to agriculture through the transportation of raw milk and grain commodities as well as grain handling and storage. An example of a business from this sector is J.R. Ferguson Milk Transport.

v) *Wholesale Trade Industries*

A number of wholesale dealers have established backward linkages with the agriculture sector through the sales of building materials, lumber, farm machinery, milk equipment, ventilation equipment, and feed and crop inputs. Forward linkages are also present, primarily through the purchase of grain and seed for resale. A total of 44 businesses from the wholesale trade sector were surveyed, an example of which is Reis Equipment Centre which sells farm machinery.

vi) *Retail Trade Industries*

Businesses included in the retail trade sector are primarily engaged in buying products for resale to the general public for personal or household consumption, and in providing related services such as installation and repair. The businesses also sell products to farmers for farm use but are classified as retail since their main activity is selling products for personal use such as appliances, hardware stores and auto parts. The strongest backward linkages to the agriculture sector are automotive sales and service type businesses. These businesses sell and/or service farm vehicles and often carry a short line of farm equipment parts (tires, alternators, batteries, oil filters, air filters etc.). In total, 55 of the businesses surveyed were from the retail trade sector an example of which is Ottawa Clutch and Auto.

vii) *Finance Industries*

A total of four financial service businesses were included in the survey. These businesses include banks, credit unions and other institutions which have backward linkages to agriculture through the provision of loans and banking services. In many instances, local branches have a separate department or specific agri-representative responsible for handling agriculture accounts. An example of a finance industry in the study area is Scotiabank.

viii) *Real Estate and Insurance Industries*

Real estate and insurance agencies have strong backward linkages to the agriculture sector. The main service provided to agriculture is the selling of agricultural property. These businesses are also involved in land appraisals and leasing farm properties. Insurance agencies offer an important agricultural input. The survey included five businesses from this industrial sector an example of which is Manotick Insurance.

ix) *Business Service Industries*

Business service industries include accountants and lawyers that provide, respectively, financial accounting services such as general bookkeeping and tax preparation, and legal services particularly in relation to real estate transactions. In total, there were five businesses from this sector in the survey an example of which is BDM Accounting.

x) *Other Service Industries*

According to Statistics Canada, 'other service industries' consist of four major business activity groups. These are: Amusement and Recreational service industries such as theatres, sporting events, casinos, and amusement parks; Personal and Household service industries such as hair salons, laundry facilities and funeral services; Membership Organization industries such as religious organizations, business organizations and professional membership organizations; and Other Service Industries, which are most relevant to agriculture as they include machinery and equipment rental and leasing, welding shops that repair farm machinery and equipment, and auctioneers. Seven businesses from this sector were included in the survey, an example of which is Mowat Welding.

9.2.2.3 Importance of the Agriculture-related Business Survey

This study measures the importance of a business through its total gross sales per year and through the number of full-time equivalent (FTE) employees at the business. This provides an assessment of all the economic activities of the business, both related and unrelated to agriculture. For example if a plumbing and heating business serves both residential and agri-producing (ie, farm business) customers, the total gross sales of this business would include both agri-related and unrelated sales.

(a) Sales for the Agri-related Businesses Surveyed

All of the businesses surveyed had a portion of their sales related to the agriculture sector. During the survey, the owner (or manager) was asked to estimate the total gross sales for their business as well as the percentage of those sales that could be attributed to the agriculture sector. For example, if a plumbing and heating business has $500,000 in total gross sales per year, and the owner estimates that 50 percent of these sales are agri-related, then the total agri-related sales for that business would be $250,000 ($500,000 X 50%).

Almost all of the businesses surveyed provided sales data (227 of 231). Statistics Canada classifies an industry with less than $5 million in annual sales as a small business. A medium size business has sales between $5 million and $25 million per year. Businesses with sales above $25 million are considered large.

By this classification, businesses related to agriculture in the study area are generally small. Ninety-two percent of the businesses surveyed (210 of 227) had sales under $5 million. This study found that agri-related businesses have a wide range of sales. Sales from the sample ranged from $20,000 to $35 million. The average total gross sales for the businesses that provided sales data was $1,224,059/business. This number is somewhat lower than the average gross sales of $4,240,865/business recorded for 154 businesses surveyed in Huron County in 1996 (Cummings et al., 1998) and $2,366,082/business recorded for 246 businesses surveyed in Simcoe County in 1999 (Cummings and Associates, 1999). However, it does approach figures that were obtained in other parts of Eastern Ontario. Average gross sales for 295 businesses in the combined Counties of Prescott, Russell, Stormont, Dundas and Glengarry amounted to $1,605,329 (Cummings and Deschamps, 1999) while average sales for 241 businesses in the combined counties of Frontenac, Lennox & Addington, and Leeds & Grenville amounted to $1,446,000 (Cummings et al,, 2000). The estimated average sales for 222 businesses in the combined counties of Lanark and Renfrew amounted to $1,289,600 (Cummings and Associates, 2000).

On average, the businesses in the study area attributed 37% of their sales to the agriculture sector. The total value of *agri-related sales* for these businesses was $102,822,000. The average agri-related sales for the 227 businesses that provided sales data was $452,960. There were a number of businesses with large agri-related sales figures. Approximately seven percent of the businesses (15 of 227) had agri-related sales in excess of $1 million while 72% of the businesses surveyed had agri-related sales below $100,000.

Figure 21 shows the percentage of agri-related sales according to industrial sector. Please note that many of the percentages reported in Figure 21 are not statistically valid because of the low number of certain business types represented in the survey. Transportation is an example of an industry that had low representation in the survey.

Additional details for some of the industrial sectors that had greater representation in the survey are discussed below.

i) *Manufacturing Industries*

The combined gross sales for the eleven manufacturing businesses amounted to $16.9 million with approximately 5% or $876,000 being agri-related.

ii) *Construction Industries*

The combined gross sales for the 88 construction businesses amounted to $56.6 million with approximately 9% or $5 million being agri-related.

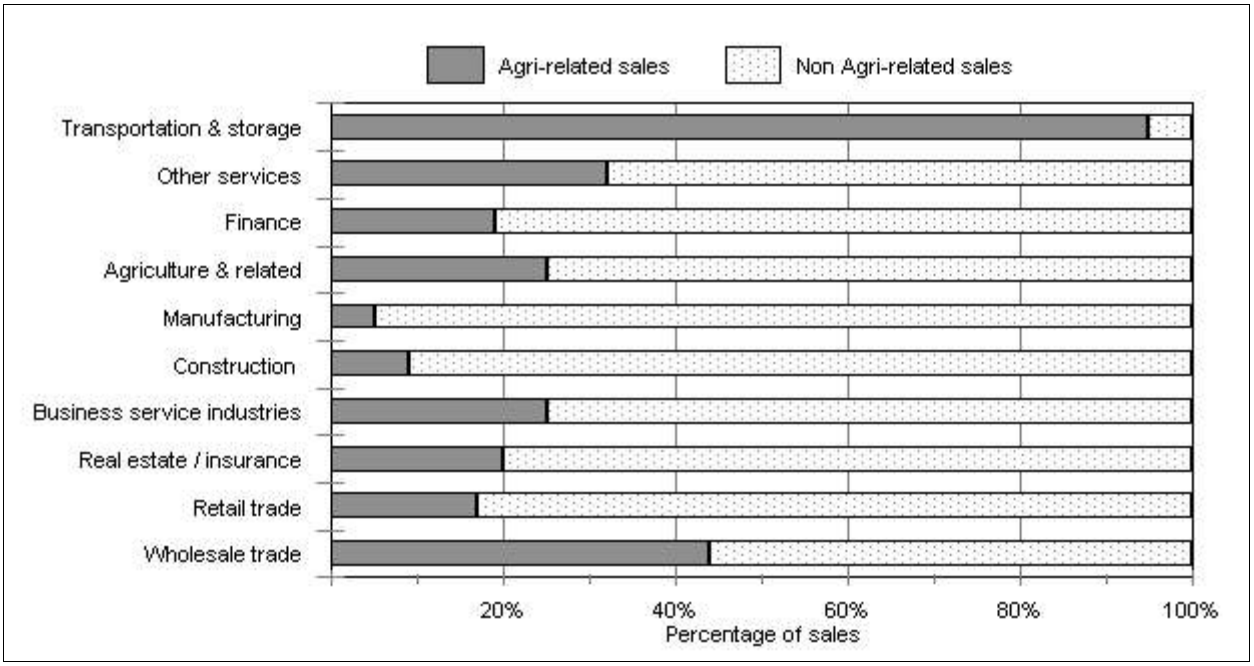
iii) *Wholesale Trade Industries*

The combined gross sales for the 46 wholesale businesses amounted to $111.1 million with approximately 44% or $49.7 million being agri-related.

iv) *Retail Trade Industries*

Retail stores typically sell products for personal or household use. However, many also sell products to the agriculture sector. The combined gross sales for the 55 retail businesses amounted to $44.2 million with approximately 17% or $7.7 million being agri-related.

Figure 21. Percentage of Agri-related Sales by Industrial Sector for the Businesses Surveyed



Source: 2000 Ag-business survey

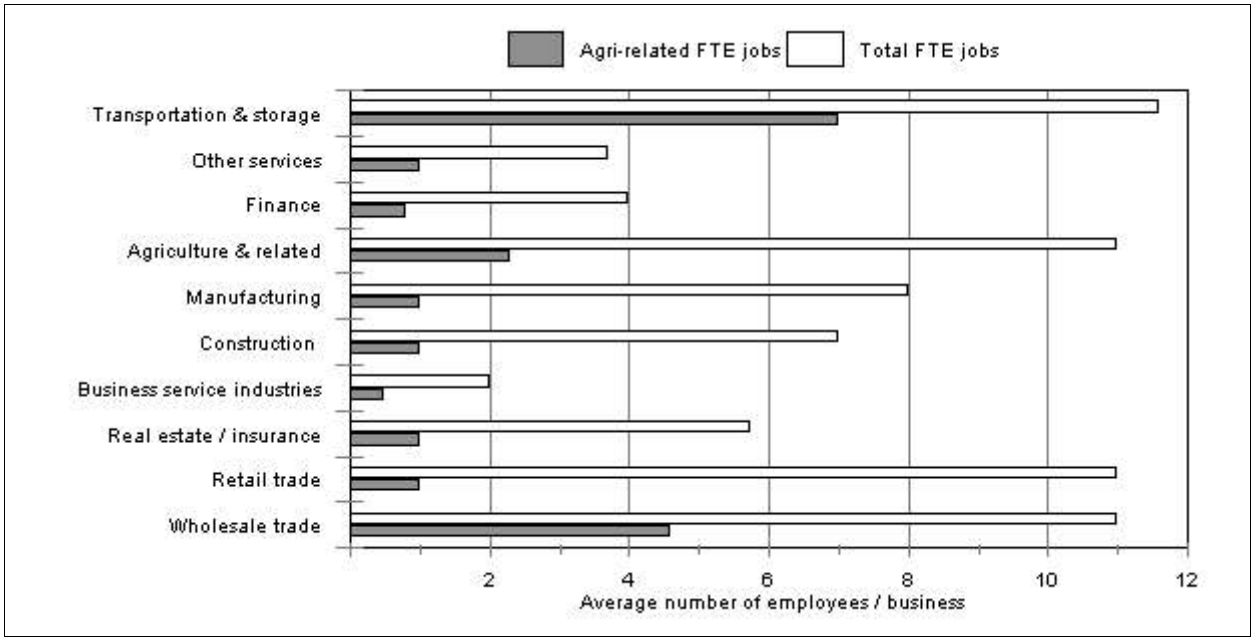
(b) Employment for the Agriculture-Related Businesses Surveyed

The number of employees in a business is another indicator of the importance of that business in the economy. An assumption of this study is that the percentage of sales related to agriculture is equivalent to the percentage of employees serving the agriculture sector for their business. If we refer to the example given earlier of a plumbing business with 50% agri-related sales, we would assume that half the employees working for the business are supported by sales directed toward the agriculture sector.

According to Statistics Canada, a small business employs one to fifty people; a medium business employs 51 to 250 people and a large business employs over 250 people. By this standard, over 97% of the agri-related businesses in the study area are small, only five businesses employ more than 50 people. The average number of employees (calculated as full-time equivalent jobs) for the businesses surveyed is eight (2,000 FTE jobs / 230 businesses). Approximately 60% of the businesses have 5 employees or less (138 of 230 businesses) while approximately 22% of the businesses have between 6 and 10 employees (50 of 230). Figure 22 shows the average number of employees per business by industrial sector for the businesses surveyed.

All of the businesses in the survey exchange goods and/or services with the agriculture sector. As such, it can be assumed that each of these businesses must have employees dedicating some or all of their work-time activities to serving these exchanges. The average number of employees working on activities related to serving the agriculture sector for the businesses surveyed was two. Seventeen percent of the businesses had a least two employees working strictly on agri-related activities (40 of 230).

Figure 22. Average Number of Full-Time Equivalent (FTE) Jobs per Business Surveyed, by Industrial Sector



Source: 2000 Ag-business survey

9.2.2.4 Exports of the Agri-related Businesses Surveyed

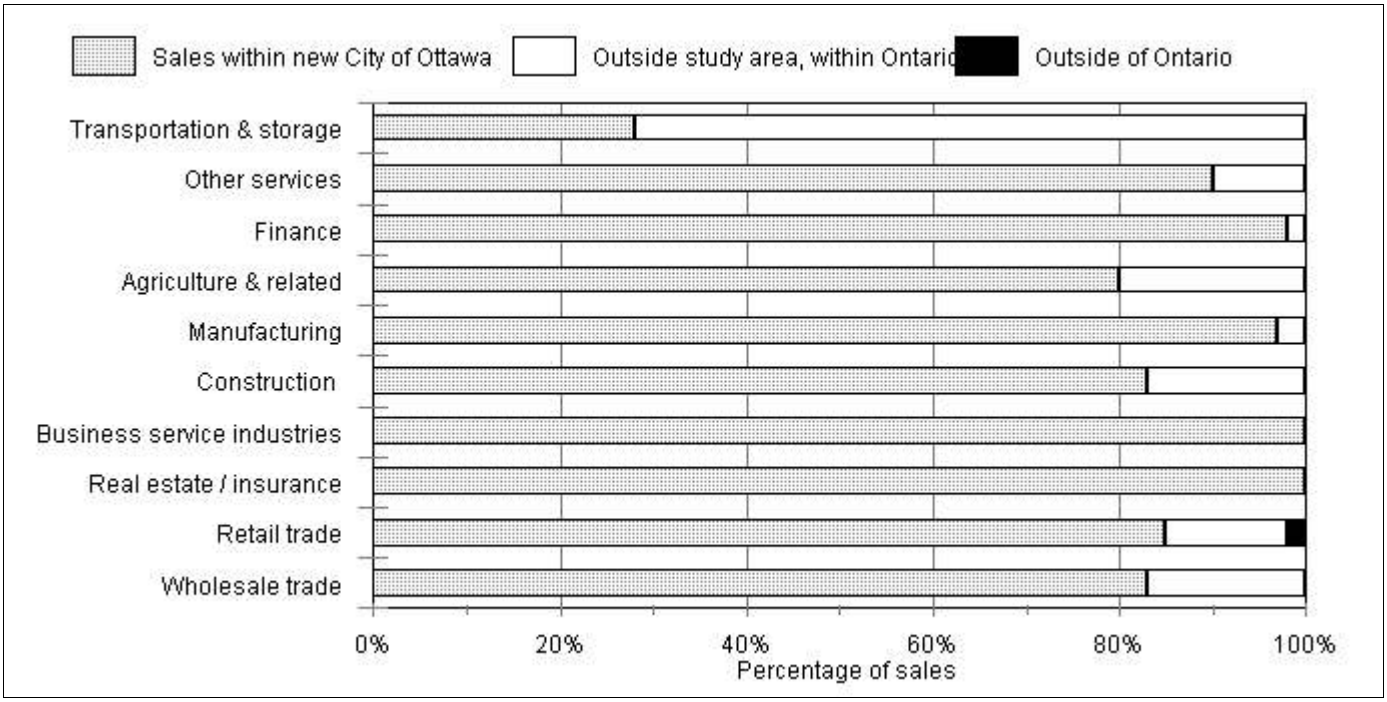
According to the 227 businesses that provided sales data for the study, 63.7% of agri-related sales are within the study area. The remaining 36.3% of their sales are exports to other locations in Ontario and exports to provinces other than Ontario. There were no sales reported for markets outside Canada.

As shown in Figure 23, Transportation and storage industries lead the other industries in terms of the proportion of total sales as exports. Sales outside of the study area accounted for approximately 28% of all sales in this industrial sector. Manufacturing and Wholesale trade were tied as the next leading industrial sectors in terms of export sales as a percentage of total sales. Seventeen percent of sales in both sectors were export related.

Fifteen percent of sales in Retail trade came from export related activity. This was the only industrial sector that reported sales outside of Ontario. Businesses in the Other services sector derived 10% of their agri-related sales from exports while Agriculture and related services derived 20% of their agri-related sales from exports.

The remaining industries, Manufacturing, Finance, Real Estate/Insurance, and Business services, all derived 95% or more of their sales from within the study area.

Figure 23. Location of Agri-related Sales by Industrial Sector for the Businesses Surveyed



Source: 2000 Ag-business survey

9.2.2.5 Summary: Agriculture-related Businesses in the new City of Ottawa

The analysis shows that businesses in the new City of Ottawa that buy from or sell to the agriculture sector, generate a substantial amount money and jobs in the area. Furthermore, these businesses generate flows of income and expenditure outside the study area. An estimated $265 million in agri-related sales are generated by businesses located in the study area of which $96 million are derived from exports outside of the region of the City of Ottawa. The total sales of agri-related businesses in the study area (sales related and unrelated to agriculture) is estimated at just over $716 million.

Indirect employment is a further impact of the agriculture sector. The total number of full-time equivalent jobs created by businesses with agricultural linkages in the new City of Ottawa is estimated at 5,100. Of this total, 1,045 jobs are associated with serving the needs of the agriculture sector.

9.2.3 Estimated Induced Jobs

Induced agricultural impacts are impacts on businesses that benefit from the expenditure of wages and salaries of workers in the agriculture and agriculture-related sectors. For the purposes of the current study we have not calculated induced sales although this would clearly add a significant figure to the overall agri-related sales total of agri-related businesses in the new City of Ottawa through the salaries of employees in the Health and Social Services, Education and Government Services sectors.

Induced employment refers to employment generated by the wages of workers in an area. We refer to wages spent in the services sector on private or public services. The economy can be divided into two general 'production' components: goods producing (primary production including agriculture, manufacturing, and construction) and service producing. The service component consists of public sector services (health and social services, education and government) and private sector services (wholesale and retail trade, accommodation and restaurant, and finance and insurance related services). Induced effects are initiated through the spending of wages earned from agriculture and manufacturing, on public services; public service employees and agricultural workers purchase goods from retail stores; retail store workers require health services etc. This pattern of progressive spending reflects the chain of multipliers *induced* by the initial wage in the agriculture or manufacturing sector.
The methodology we used to estimate the size of this multiplier is outlined below.

To make estimates of the induced jobs in the study area, West Carleton Township was selected to represent the study area as it reported the highest number of farm jobs in the region for 1996. The total direct employment figure for the two primary production industries in West Carleton, Agriculture and Manufacturing (520 and 1,320 respectively for a total of 1,840 jobs), was divided into the total number of jobs in the Health and Social Services, Education and Government sectors (695, 555, and 1,000 respectively for a total of 2,250 jobs).[15] This calculation indicates that for every job created in the two primary production industries, 1.2 induced jobs were supported in the three public service sectors.

When this number is applied to the total number of direct and indirect jobs related to agriculture for the study area as a whole (3,510 direct and 1,045 indirect jobs for a total of 4,555 jobs X 1.2), it indicates that 5,466 induced jobs are supported by the *local* agriculture sector.

It is important to note that the induced component presented here, reflects an estimate of jobs associated with serving the needs of farm operations based in the new City of Ottawa. Clearly, there are a substantial number of induced jobs in the study area that are primarily involved in serving agri-related interests outside the study area through

[15] For our estimates we have excluded the 'private sector services' from induced employment because some of these jobs were already covered in the agriculture-related business survey. This helps in avoiding a double count of some jobs.

the offices of federal government departments based in the new City of Ottawa.

One of the older and larger federal departments is the Department of Agriculture and Agri-Food Canada (AAFC). In addition to administering several service branches (Research, Strategic Policy, Market & Industry Services, etc.), AAFC oversees a number of large agencies that are based in Ottawa including the National Farm Products Council and the Canadian Food Inspection Agency. The Canadian Dairy Commission, a crown corporation administered by AAFC, is also based in Ottawa. The Department also operates the Central Experimental Farm in Ottawa which is home to the Eastern Cereal and Oilseed Research Centre.

9.2.4 Total Direct, Indirect and Induced Impacts

As shown in Table 25, there are 3,510 direct, 1,045 indirect and 5,466 induced jobs created as a result of the agriculture sector in the study area. Thus, farm operations, businesses they buy from and sell to, and services that support farmers and farm businesses, are estimated to support approximately 10,021 jobs.

When this total employment figure is divided by the total number of direct agriculture jobs, a multiplier of 2.8 is the result. This calculation allows us to estimate that for every job in the agriculture sector, an additional 1.8 jobs related to agriculture are supported.

Table 28 Total Sales and Employment Related to Agriculture in the New City of Ottawa

	Sales	Jobs
Direct	$136,734,630	3,510
Indirect	$265,280,760	1,045
Induced		5,466
Total	$402,015,390	10,021

In terms of dollars, agriculture makes a substantial contribution to the local economy. There are $136.7 million in direct sales and $265.2 million in indirect sales associated with agriculture in the new City of Ottawa. In total, approximately $402 million in agri-related sales are generated in the study area. In order to estimate the sales expenditure multiplier in the study area, the total amount of agri-related sales for the area was divided by the total amount of direct sales. This produces a sales expenditure multiplier of 2.94. In short, we can use this calculation to estimate that for every dollar generated by direct agricultural sales (farm gate sales), an additional $1.94 in sales related to agriculture is also produced. Please note, these are gross agriculture-related sales and no attempt has been made to identify the “net value-added” component.

9.2.5 Comparison to Previous Studies

A number of other agri-related business surveys have been conducted in various regions of Ontario using the same methodology applied here. Research has been completed for: Huron County (1998), Simcoe County (1999), Perth County (2000), Lambton County (2000) the combined counties of Prescott, Russell, Stormont, Dundas and Glengarry (1999), the combined counties of Frontenac, Lennox & Addington, Leeds and Grenville (2000), the combined counties of Elgin, Middlesex and Oxford (2000), and the combined counties of Lanark and Renfrew (2000). Table 29 and 30 compares sales and employment data from research collected in other areas of Ontario with the results from the new City of Ottawa research.

While sales and job figures are not directly comparable because of differences in size and characteristics of the study areas, the multipliers associated with these figures provides some insights into the importance of the linkages between agriculture-related business and farm enterprises (Table 29). The sales multiplier estimated for the new City of Ottawa (2.9) is similar to that of Simcoe County (2.9), the combined Counties of Frontenac, Lennox & Addington, Leeds & Grenville (2.9) and the combined Counties of Prescott, Russell, Stormont, Dundas and Glengarry (3.0).

With respect to employment (direct, indirect and induced), the new City of Ottawa employment multiplier (2.8) is similar to that of Simcoe (3.0) and the combined Counties of Prescott, Russell, Stormont, Dundas and Glengarry (3.0).

Comparing the number of agricultural jobs to jobs in agri-related businesses, we find that the study area has a 3:1 ratio. While there are a number of other areas in the province with similar ratios, the new City of Ottawa is quite distant from Huron County, the largest agricultural county in the province in terms of farm gate sales. The ratio estimated for Huron is 1:3 or one agricultural job for every three jobs in agri-related business.

Table 29. Total Agri-related Sales for Selected Areas of Ontario ($ million)

Research Area	Direct Sales (Farm gate sales)	Indirect Sales (Agri-related businesses)	Total Sales	Sales Expenditure Multiplier	
Lambton	$301	$472	$773	2.6	
Elgin, Middlesex, Oxford	$1,131	$1,490	$2,621	2.3	
Huron [a]	$512	$1,489	$2,001	3.9	
Perth	$430	$653	$1,083	2.5	
Simcoe	$265	$518	$783	3	
Frontenac, Lennox & Addington, Leeds & Grenville	$183	$351	$534	2.9	
Lanark & Renfrew	$98	$142	$240	2.4	*Eastern Ontario Region*
Prescott, Russell, Stormont, Dundas & Glengarry	$363	$756	$1,119	3.1	
New City of Ottawa	$137	$265	$402	2.9	

Source: Cummings et al., 1998, 1999 & 2000.

[a] Huron County was the first study of this type to be carried out. The methodology has been continuously refined for the succeeding studies. The higher numbers associated with Huron County's Indirect Sales may reflect these refinements.

Table 30. Total Agri-related Jobs for Selected Areas of Ontario

Research Area	Direct Agri-Jobs	Indirect Jobs (Agri-related businesses) [b]	Induced Jobs	Total Jobs	Employment Multiplier	
Lambton	3920	1624	3382	8926	2.3	
Elgin, Middlesex, Oxford	16515	6856	9348	32720	2	
Huron [a]	5025	14186	3528	22739	4.5	
Perth	4935	3133	3066	11131	2.3	
Simcoe	4770	2237	7414	14421	3	
Frontenac, Lennox & Addington, Leeds & Grenville	4325	1935	5321	11581	2.7	
Lanark & Renfrew	3010	848	3163	7021	2.3	*Eastern Ontario Region*
Prescott, Russell, Stormont, Dundas & Glengarry	5955	4516	7007	17478	3	
New City of Ottawa	3510	1045	5466	10021	2.8	

Source: Cummings et al., 1998, 1999 & 2000.

[a] Huron County was the first study of this type to be carried out. The methodology has been continuously refined for the succeeding studies. The higher numbers associated with Huron County's Indirect Sales may reflect these refinements.

[b] Indirect jobs are presented as full time equivalents.

Agri-related businesses in the new City of Ottawa conduct a considerable amount of trade with other regions of Ontario. With 36% of all agri-related sales being export related, the new City of Ottawa leads all other jurisdictions in Eastern Ontario and it matches several large agricultural counties in southern and western Ontario (Table 31). The new City of Ottawa is clearly an important goods and service centre for farm operators in neighbouring counties.

Although the survey did not detect any agri-related sales outside Canada, this does not mean that agri-related businesses in the new City of Ottawa are not making sales in the international marketplace; they simply may have been missed in the random sample selection process.

Table 31. Location of Agri-related Business Sales for Selected Areas of Ontario

	Location of Sales (%)					
Research Area	Sales within the Study Area	*Sales outside Study Area but within Ontario*	*Sales to other Provinces*	*Sales outside Canada*	Total Sales outside the Study Area	
Lambton	83.6	*15.6*	*0.3*	*0.5*	16.4	
Elgin, Middlesex, Oxford	66.8	*24.7*	*8.5*		33.2	
Huron [a]	42.9	*34.5*	*22.6*		57.1	
Perth	65.5	*33*	*1.2*	*0.3*	34.5	
Simcoe	43.6	*41.5*	*3.5*	*11.4*	56.4	
Frontenac, Lennox & Addington, Leeds & Grenville	76.4	*20.5*	*0.7*	*2.4*	23.6	*Eastern Ontario Region*
Lanark & Renfrew	86.2	*9.9*	*3.8*	*0.1*	13.8	
Prescott, Russell, Stormont, Dundas & Glengarry	91.5	*5.8*	*1.5*	*1.2*	8.5	
New City of Ottawa	63.7	*36.2*	*0.1*	--	36.3	

Source: Cummings et al., 1998, 1999 & 2000.

[a] Huron County was the first study of this type to be carried out. The methodology has been continuously refined for the succeeding studies. The higher numbers associated with Huron County's Indirect Sales may reflect these refinements.

10.0 Conclusions

The new City of Ottawa derives significant advantages from the agriculture industry within its borders. These advantages come in the form of sales and jobs created within the industry itself, as well as sales and jobs created through linkages with the local economy. The City also benefits from export dollars through the sale of agricultural goods to areas outside the City.

Agriculture in Ottawa is fortunate to have a large land base that permits a diversity of production. Several municipalities have over 60% of their land classed as 1, 2 or 3 soils. Altogether, over half of the soil in the City of Ottawa (52%) is classed in the one of the first three soil categories - those most suitable for agriculture.

Ottawa is currently experiencing a diversification of its agricultural industry with an increasing number of farm types appearing in the area. In the past, Ottawa was mainly a dairy and cattle producing area. While these farm types are still prominent, new farm types, such as field crop producers and miscellaneous specialty farms, have increased in importance and number in the City. Farm size is also on the rise. The latest figures indicate that the average farm size is 199 acres, an increase from the 1991 figure of 186 acres. Ottawa farmers note that while farm sizes may seem large, they are substantially smaller than farms in other areas (e.g. US dairy farms). Farmers suggest that a new set of criteria may be used to judge farm size, such as the number of animals per farm or acre.

There has been a popularly held belief in Ontario and beyond that agriculture is a declining industry. This is often based on the decline in the number of farm jobs. This includes farm owners, managers and their employees. Other indicators such as declining farm numbers and rural populations becoming increasingly non-farm based, seems to confirm the view that agriculture is a fading industry.

The new City of Ottawa has, indeed, experienced a decline in the number of agricultural jobs. It is important to note, though, that the loss has not been as great as the Eastern Ontario region as a whole. In fact, compared to the rest of the counties within Eastern Ontario, the new City of Ottawa provides the highest number of agricultural jobs at 3,510.

It is the contention of the authors of this report that the loss in farm jobs in the new City of Ottawa, as well as the rest of Ontario, does not necessarily indicate a decline in the health of the industry as a whole. While on-farm jobs in a given region may decrease, the number of jobs created within a regional economy **as a result of agriculture**, also indicates the health of the industry. As noted, agriculture in Ottawa is diversifying in terms of production types. This process leads to a similar diversification in the products and services demanded by the agricultural base. Businesses that provide the inputs and buy the outputs of farming are responding. Sales and jobs associated with this increase are

significant in the region. One of the tasks of this study is to examine **how much** agriculture affects the economy of Ottawa.

In the course of the study, the researcher posed the following question; if all 1,492 farms operating in the new City of Ottawa were to retire and move to Florida tomorrow, what would be the effect on the City of Ottawa economy? If we were to assume the patterns of the 1996 and 2000 data on farms and businesses applied, we could say the following. Firstly, 3,510 agricultural jobs would be lost. A further 1,045 jobs would be lost in the city by businesses that depend on the agricultural industry. This would include all feed mill operators and large animal veterinarians, as well as some lawyers and bank tellers, to name a few. Currently, for every agricultural job in Ottawa, two jobs are created in the wider economy. In addition, some 5,466 jobs would be lost in the induced agriculture sector. This refers to doctors providing care for the farmer and his/her children, teachers providing education for the farmer's and farm employee's children, and grocery clerks providing goods to farm employees spending their paychecks.

In total, there would be a loss of 10,021 jobs in the new City of Ottawa if farmers stopped operating tomorrow and the patterns of the data reported here were applied. Add to this decline a loss of over $402 million, which is the amount that agriculture contributes to the City of Ottawa economy per year.

Farmers in Ottawa provide these benefits to the economy despite challenges encountered along the way. For example, farmers find it difficult and sometimes impossible to attract farm employees to work on their farms. The farmers report that the shortage of labour is due to the competition for workers in other sectors of the economy, including high tech. Farmers also find it difficult to find the appropriate training for their employees. The cost of training is often a barrier. Farmers also report that the loss of many government services that supported agriculture has resulted in farmers now paying for services that used to be free.

Of all the challenges faced by farmers, they state that their most frustrating and difficult is the lack of pricing control of inputs and outputs to their farm. Access to capital to operate and expand their farms is their second most important concern.

These concerns are significant to farmers, and should be similarly important to the economic policy makers within the new City of Ottawa. The agricultural industry demands support so that it can continue to provide the advantages to the local economy outlined within this report.

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