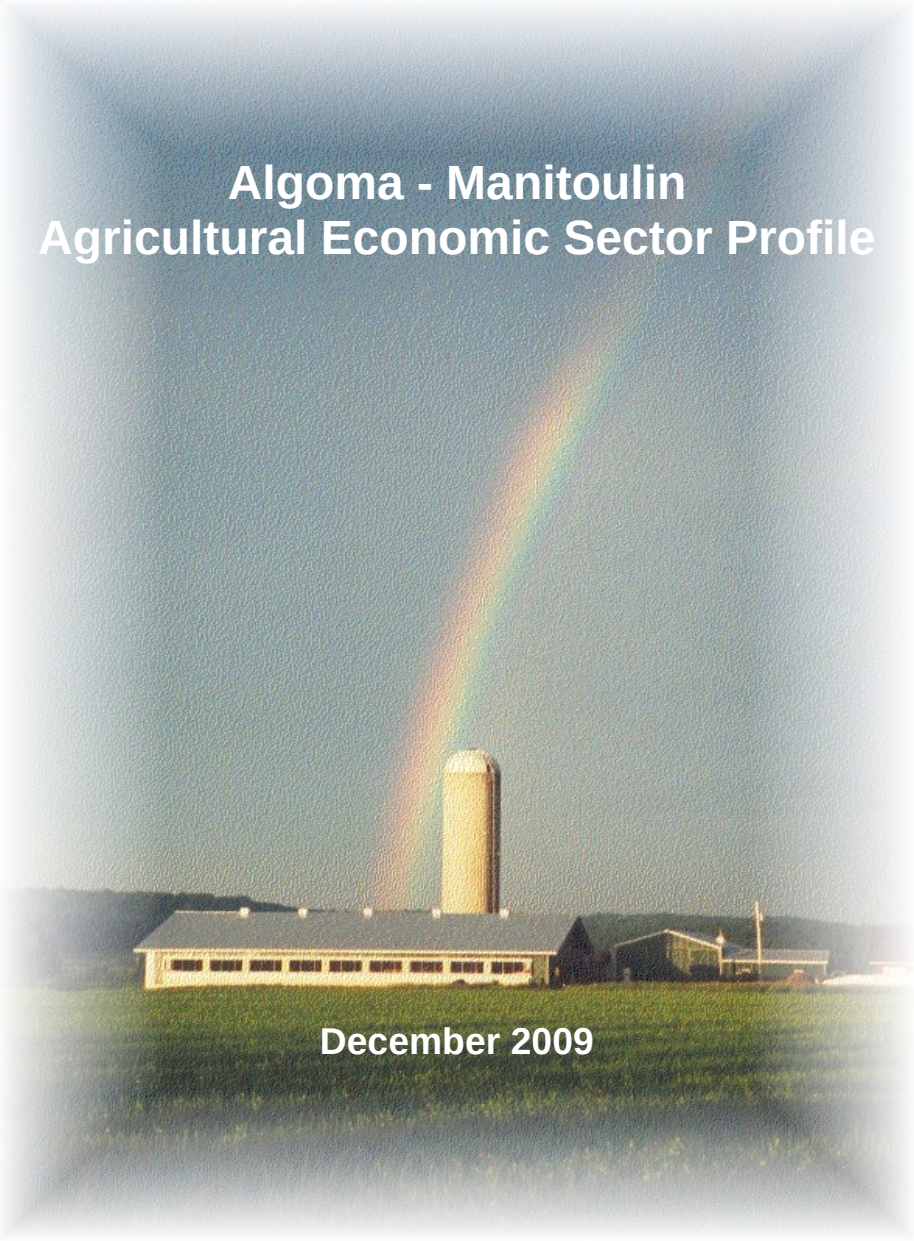
# Algoma - Manitoulin
# Agricultural Economic Sector Profile



**December 2009**

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*in and for the North*

Northwestern Ontario Development Network

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## Executive Summary

The purpose of this report is to provide a profile of agriculture in the Algoma - Manitoulin region and an update on the economic impact of agriculture on the wider economy. The report is intended to help the broader community better understand the nature and economic significance of the agricultural economy in terms of dollars and jobs. The findings are also intended to inform program and policy development work within northern Ontario. Only by better understanding the important role played by food related activities can the various participants in the agri-food economy work together to make decisions which are economically sound, environmentally sustainable and socially responsible.

The research in this report relies on data from the Population and Agricultural Census (1996-2006) and a review of the findings from the previous agri-economic impact study conducted in the region in 2002. The study was completed as part of a larger collaborative partnership between stakeholder groups in Thunder Bay District, Rainy River District, Kenora District and Cochrane District. The focus of this report is on the Algoma - Manitoulin region.

The value of agricultural production in the Algoma - Manitoulin region is substantial. In 2005, farmers in the region reported a total of $34.4 million in gross farm receipts. With respect to jobs, the local agriculture sector directly supports about 620 on-farm jobs.

It is important to note that the above job figures for agriculture do not include all part-time positions. Indeed, the employment profile of the agriculture sector is undergoing a transformation as farmers increasingly work more hours off the farm to supplement their farm income. Between 1995 and 2005, the proportion of Algoma - Manitoulin region farmers working off the farm increased from 35% to 52%. Producers often link the need for a second income to a combination of factors including stagnant or shrinking commodity prices and rising production costs. The increase in off-farm work is also having a negative effect on the amount of time that farm leaders are able to volunteer for organizations and activities that have traditionally helped to promote agriculture in the region.

It is also important to emphasize that the decline in agriculture employment does not reflect trends in farm productivity. Agriculture in the Algoma - Manitoulin region continues to have competitive advantages and economic opportunities including a substantial farmland base that supports the growth of a variety of crops; lower land prices relative to land prices in southern Ontario, its isolation from the threat of contaminants from industrial farms; and its access to a regional market (northeastern Ontario).

The Algoma - Manitoulin region reported just over 292,000 acres of farmland from 642 farms in 2006. Historically, the region reported a much larger area of farmland. For example, in 1981, the region reported just over 342,000 acres of farmland (113,791 acres in Algoma District, 204,199 acres in Manitoulin District, and 24,303 acres in Sables-Spanish Rivers).

With respect to crop production, the climate and soil conditions in the Algoma - Manitoulin region allow for the production of a variety of field crops including barley, wheat, oats, corn, mixed grains, soybeans, canola and hay crops. Approximately 78,000 acres or 27% of the total farmland base in the region was used for crop production in 2006. Based on projections from climate change models, the growing season in the region is expected to gradually increase over the next 100 years which will result in further crop production opportunities for the region.

The Algoma - Manitoulin region features a variety of farm types and sizes. Major farm production activities in the region include beef production, hay production, dairy production, greenhouse, nursery and floriculture production, as well as a range of other animal production activities including sheep, goats, alpacas, and horses.

The average farm size in the Algoma - Manitoulin region is 455 acres but there is considerable variation in farm sizes across the region. On average, farms in Manitoulin District are the largest at 690 acres while farms in Algoma District are the smallest at 286 acres.

The agri-related business community plays an important role in supporting agriculture in the Algoma - Manitoulin region. These businesses represent a variety of industry sectors including retail and wholesale trade, manufacturing, construction, transportation and business services. Agri-related businesses provide the support infrastructure for the agriculture sector and through their linkages to farm based activities, generate substantial economic benefits for the region.

A review of the findings from the 2002 agri-economic impact study for the Algoma - Manitoulin region in the context of more recent economic activity reveals that agriculture continues to make a significant contribution to the wider economy beyond the farm gate.

Allowing for a ±10% change in agri-related business activity since the 2002 study, we estimate that agriculture in the Algoma - Manitoulin region currently generates between $37 million and $45 million in indirect sales (agri-related business sales) and sustains between 218 and 266 indirect jobs. With respect to induced impacts, we estimate that agriculture in the region sustains between 1,361 and 1,439 jobs in the public service sectors (i.e. health services, education services, public administration).

Overall, the total economic impact of agriculture in the Algoma - Manitoulin region amounts to between $72 million and $80 million in sales (direct and indirect) and between 2,200 and 2,325 jobs (direct, indirect and induced). The associated sales expenditure multiplier indicates that for every dollar generated in direct agricultural sales

(farm gate sales), an additional $1.10 to $1.30 in sales related to agriculture is generated in the wider economy. The associated employment multiplier indicates that for every job in the agriculture sector an additional 2 to 3 jobs are supported in the wider economy.

With respect to opportunities, agri-sector stakeholders from the region report that more grain crops including canola could be grown in the region with the establishment of support infrastructure such as storage and drying facilities. Agri-sector stakeholders also identified the potential for biomass crops to be grown in the region.

There is also growing involvement in value added farm activities in northern Ontario. In some cases farmers are working independently on their value added activities while in other cases producer cooperatives have been established. Producer cooperatives are viewed as an effective way to facilitate value-added product development and the establishment of support infrastructure including processing, marketing and distribution systems. Agri-sector stakeholders acknowledge the need for greater networking between producers and community organizations that are working to promote local food production and consumption.

**Acknowledgements**

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- Northwestern Ontario Development Network
- FedNor
- Ontario Ministry of Agriculture, Food and Rural Affairs (Rural Economic Development Program)
- Northwestern Ontario Federations of Agriculture
- Food Security Research Network

A special thank you goes to the farmers and agri-sector stakeholders that participated in key informant interviews.

HCA also acknowledges the support provided by Neil Tarlton, Ontario Federation of Agriculture Member Service Representative.

It is hoped that readers find the report informative and through it gain a better understanding of the important role played by agriculture and food-related activities in the Algoma - Manitoulin region.

Harry Cummings and Associates
*December 2009*

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## 1.0 Introduction

Agriculture is an important industry in northeastern Ontario. Unfortunately, the decline of on-farm employment across Ontario is often interpreted as a sign that the sector has limited or no growth potential. In reality, farm productivity is increasing across Ontario. Furthermore, research on the broader impacts of agriculture has shown that the sector has important linkages with other industry sectors and can play an important role in contributing to economic diversification and making communities less vulnerable to economic variability (Cummings, 2005).

One of the notable characteristics of the agriculture sector in northeastern Ontario is the diversity of the production which provides residents in the area with a range of local food options. The development of local food systems is a growing area of interest in North America and elsewhere and is viewed as a logical strategy to improve community economic vitality (Feenstra, 2007).

An agri-economic impact study was completed for the Algoma - Manitoulin Study Area in 2001-2002 and updated in 2004.[1] The Study Area includes all of the Manitoulin District and Algoma District as well as the southwest corner of Sudbury District, specifically the Township of Sables-Spanish Rivers, as this area is seen as having more in common with the Algoma - Manitoulin region than other agricultural areas of northeastern Ontario. The study determined that the local agriculture sector generated approximately $31.3 million in direct sales and $41.3 million in indirect sales. The related sales expenditure multiplier (2.3) indicates that approximately every dollar generated by direct agricultural sales produced an additional $1.3 in sales related to agriculture in the wider economy. With respect to jobs, the 2002 study found that the agriculture sector in Algoma - Manitoulin supported a total of 2,827 direct, indirect and induced jobs. The related employment multiplier (3.5) indicates that approximately every job in the agriculture sector supports/generates an additional 2.5 jobs in the wider economy (Cummings and Associates. 2004).

The purpose of this report is to provide an update of the 2004 report including an overview of the agriculture sector based on the 2006 Census of Agriculture and a general overview of the wider economy in the region to provide context.

The report is intended to help the broader community better understand the nature and economic significance of the agricultural economy in terms of dollars and jobs. The findings are also intended to inform program and policy development work within northern Ontario. Only by better understanding the important role played by food related activities can the various participants in the agri-food economy work together to make decisions which are economically sound, environmentally sustainable and socially responsible.

[1] At the time the Algoma - Manitoulin 2001-2002 study was completed data from the 2001 Population and Agriculture Census was not available. In 2004, the 2001-2002 report was updated by HCA with 2001 Census data.

The first chapter of the report introduces the scope of the research while Chapter 2 of the report presents a profile of population and employment indicators in northern Ontario with a special focus on the Algoma – Manitoulin region. This includes general background information on the population such as population changes experienced in the region as compared to northern Ontario, and Ontario. This chapter also examines the employment associated with the different industry groups.

Chapter 3 of the report provides information on the land base resources in the region including agricultural soils. It also features information on the local climate and growing conditions and the implications of climate change on future weather patterns.

Chapter 4 of the report provides an overview of some the key local organizations and institutions that promote and support agriculture in the region.

Chapter 5 provides a detailed picture of the agriculture sector in the region including a trend analysis of production activities between 1996 and 2006. Data was drawn from the Agricultural Census, to describe the farmland area, land use, number of farms, farm size, farm type, farm receipts, farm operating expenses, and characteristics of agricultural operators in the region. Comparisons are made between the Algoma - Manitoulin region and the agriculture sector profile for northern Ontario and Ontario.

Chapter 6 of the report examines the role and growing importance of agri-tourism and educational related activities in the region including on-farm retail activities, agricultural fairs, and farmers markets.

Chapter 7 provides a brief review of the agriculture economic impact assessment that was conducted in the Algoma - Manitoulin region in 2002 and provides an estimate of the current total economic impacts of the sector.

Chapter 8 examines some of the challenges and opportunities associated with the agriculture sector in Algoma - Manitoulin region.

Chapter 9 presents the study conclusions.

## 1.1 Background to the Study Methodology

The study focuses on the dollars and jobs created by agriculture in the Algoma - Manitoulin region.

The methodology uses an input-output like analysis as a tool for assessing the total economic impact of agriculture in the region. 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; the sales to other sectors by a sector are the outputs.

Three measures are associated with the notion of economic impact:

- Direct impact (spending on goods and services by businesses involved in primary production/farming);
- Indirect impact (spending on goods and services by those businesses supplying the businesses involved in primary production); and
- Induced impact (spending of wages earned by employees of businesses involved in primary production or in businesses supplying goods and services to these businesses)

The research in this report relies on data from the Population and Agricultural Census (1996-2006) and a review of the results from the agri-economic impact study that was conducted for the Algoma – Manitoulin region in 2002, and updated in 2004. Additional details on the methods used are provided in Chapter 7.[2]

[2] The research strategy for the agri-economic impact study originated in Huron County through research undertaken by Harry Cummings and colleagues in 1998. Since that time, Cummings and colleagues have applied the same basic methodology to agri-economic impacts studies in counties across Ontario including Perth, Lambton, Simcoe, Elgin, Middlesex, Oxford, Prescott, Russell, Stormont, Dundas and Glengarry, Frontenac, Lennox and Addington, Leeds and Grenville, Ottawa, Lanark and Renfrew, and Waterloo. Cummings has also completed several agri-economic impact studies in northeastern Ontario including the Blue Sky Region (Nipissing, Parry Sound, East Sudbury District, and the City of Greater Sudbury), Algoma and Manitoulin, and Temiskaming.

## 1.2 The Study Area and Physical Infrastructure

Northern Ontario is comprised of 11 districts in total and has a land area of 802,000 km$^2$ which constitutes about 87% of the land area of Ontario (Map 1.1).[3] The three westernmost districts in northern Ontario (Thunder Bay, Kenora and Rainy River) constitute northwestern Ontario and the remaining districts including Algoma and Manitoulin constitute northeastern Ontario.

**Map 1.1: Districts of Northern Ontario**


Source: Modified from: Brock University Map Library. Ontario-Regional Municipalities, Counties & Districts. St. Catharines, Ontario: Brock University Map Library. 2004.

As noted above, the Study Area for this report overlays several districts in northeastern Ontario including Algoma, Manitoulin Island and the southwest corner of Sudbury District (the Township of Sables-Spanish Rivers). Agricultural activity in the Study Area is largely concentrated across much of Manitoulin District and pockets of agricultural activity in the southern portion of Algoma District and the Township of Sables-Spanish Rivers.

[3] The districts of Parry Sound and Muskoka are included here as part of Northern Ontario even though they are geographically in Central Ontario. In 2004, the provincial government removed Muskoka from its definition of Northern Ontario for development funding purposes, but continues to treat Parry Sound as a Northern Ontario division. The federal government retained both of these districts in the service area of its development agency FedNor. The City of Greater Sudbury is located in the District of Sudbury but is not politically part of the District of Sudbury.

The City of Sault Ste. Marie is the largest urban centre in the Study Area with a population of approximately 75,000 in 2006. The City of Eliot Lake is the next largest urban centre in the Study Area with a population of about 11,500 in 20006. Just east of the Study Area is the City of Greater Sudbury which has a population of approximately 158,000.

Map 1.2 provides an overview of the Districts in northeastern Ontario including select communities and major highways.

### *Physical Infrastructure in the Region*

The Algoma - Manitoulin-North Shore - Sudbury West region is well served by a transportation system that includes highways, rail, marine and air service. Although some parts of the region are more isolated than others, agricultural areas are for the most part within close proximity to well maintained highways with year round access.

#### Highways

Highway 17 is the principal highway that extends east-west across the region and connects the City of Sault Ste. Marie and the City of Greater Sudbury. Highway 17 is also the primary route of the Trans-Canada Highway. The distance between the City of Sault Ste. Marie and the City of Greater Sudbury is approximately 300km. Highway 69 extends south from the City of Greater Sudbury through Parry Sound where it eventually connects with Highway 400 at Victoria Harbour in Simcoe County and continues south until it meets Toronto. The approximate distance between Sudbury and Toronto is 390km.

Sault Ste. Marie, Ontario is joined to Sault Ste. Marie, Michigan by the International Bridge which connects Huron Street on the Ontario side and Interstate 75 on the Michigan side. Sault Ste. Marie, Ontario recently opened a multi-modal terminal designed to take advantage of the Sault as a rail, road, and water transportation hub.

Other key roadways in the region include Highway 108 which extends north from Serpent Lake on Highway 17 to the City of Elliot Lake and Highway 129 which extends north from Thessalon on Highway 17 to the township of Chapleau. Manitoulin Island is served by Highway 6 which extends south from Baldwin on Highway 17.

#### Rail

The Huron Central Railway runs between Sault Ste. Marie and Sudbury. In 2008, the Huron Central Railway handled more than 16,000 carloads of freight. In September 2009, the provincial government announced that the railway will be upgraded to ensure the efficient transportation of goods in the region (Northern Ontario Heritage Fund Corporation. September 2009). The Canadian National Railway also services Sault Ste. Marie from the north.

The City of Greater Sudbury is located on major rail systems linking northern Ontario with central Ontario and eastern Canada. Sudbury is a crossroad for rail service in Northern Ontario. The mainlines for Canadian Pacific and Canadian National from Toronto, Montreal and western Canada all converge in Sudbury.

Airports

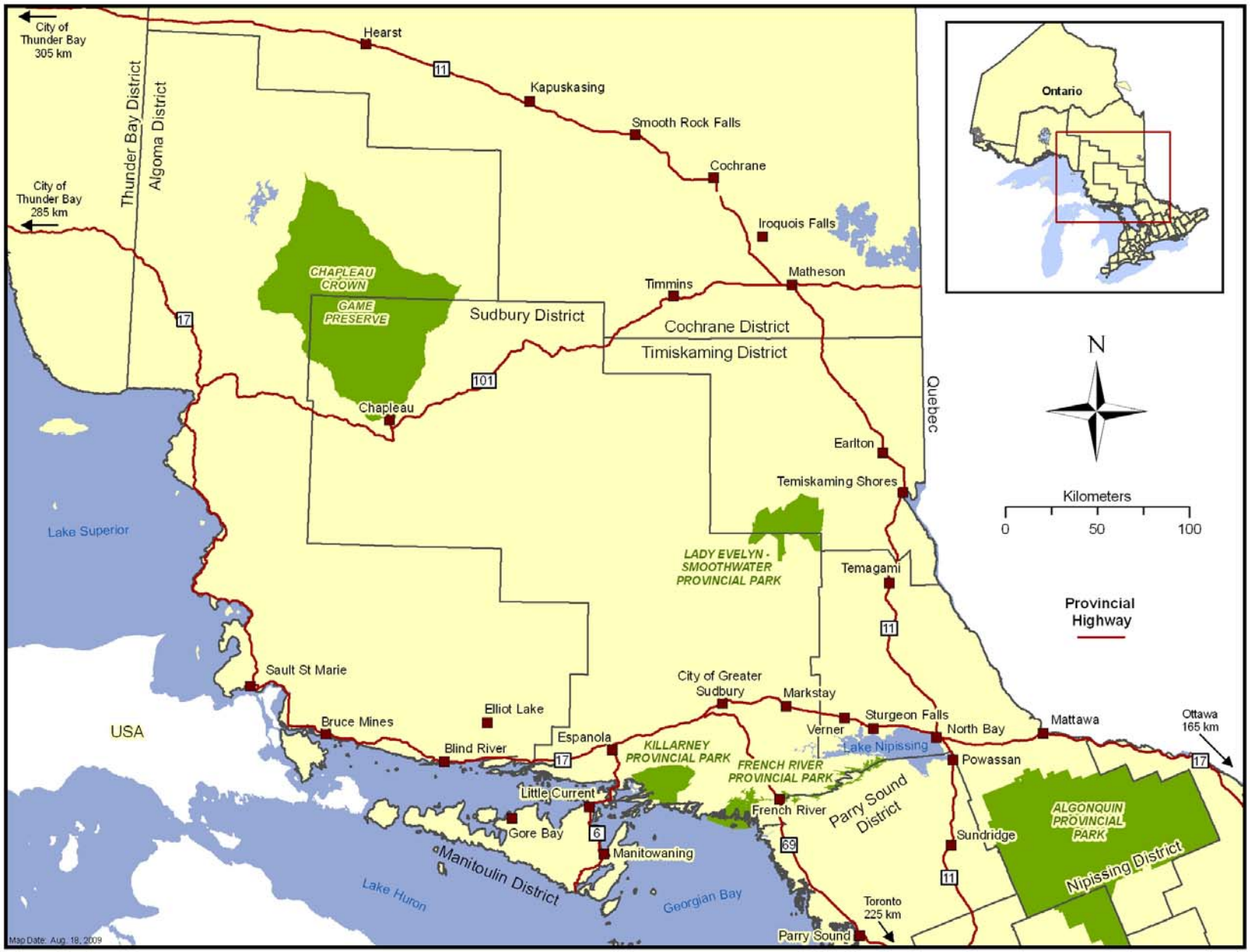
The region features two major airport terminals located in Sault Ste. Marie and Sudbury. The Sudbury Airport is one of northern Ontario's busiest.

Marine

Marine transportation in the region is facilitated by the locks in Michigan which are an integral component of the St. Lawrence Seaway.

The Owen Sound Transportation Company provides a ferry service between South Baymouth on Manitoulin Island to Tobermory (Tobermory is approximately 300 km from Toronto). The ferry service operates between May and October and accommodates passengers and car and commercial vehicles. The ferry service also accommodates the transport of livestock.

**Map 1.2: Communities and Major Highways in Northeastern Ontario**



## 2.0 Socio-Economic Profile of Algoma - Manitoulin

### 2.1 Introduction

This section of the report provides a socio-economic profile of the Study Area. Data for the profile was drawn from the Population Census which is conducted by Statistics Canada every five years. The most recent census was conducted in 2006. Data for the region are compared to data for the northern Ontario region as a whole and the province as a whole in order to provide detailed insights into the relative importance of the region's contribution to these economies. Socio-economic characteristics are important to the viability and resiliency of agriculture – the general characteristics of the area which surrounds a particular farming community can impact agricultural diversity and profitability.

### 2.2 Population and Population Change

Between 1996 and 2006 the total population for the Study Area declined from 140,737 to 133,788 or 5%. However, as shown in Table 2.1, Manitoulin District on its own was one of only three Districts in northern Ontario that experienced an overall increase in population between 1996 and 2006. During the same period the population for northern Ontario declined by 5% while the population for the province increased by 13%.

A notable difference between northeastern Ontario and northwestern Ontario is the size of the Franco-Ontarian population. In northeastern Ontario approximately 25% of the population speaks French as a first language, compared to just 3% in northwestern Ontario.

**Table 2.1: Population 1991 to 2006 – Districts Ranked by 2006 Population**

| | 1996 | 2001 | 2006 | Percent change 1991to 2006 |
|---|---|---|---|---|
| Ontario | 10,753,573 | 11,410,046 | 12,160,282 | 13% |
| Northern Ontario Region | 786,391 | 746,778 | 745,372 | -5% |
| City of Greater Sudbury * | 165,362 | 155,268 | 157,909 | -5% |
| Thunder Bay District | 157,619 | 150,860 | 149,063 | -5% |
| **Algoma District *** | **125,455** | **118,567** | **117,461** | **-6%** |
| Nipissing District * | 84,832 | 82,910 | 84,688 | 0% |
| Cochrane District * | 93,240 | 85,247 | 82,503 | -12% |
| Kenora District | 63,360 | 61,802 | 64,419 | 2% |
| Parry Sound * | 39,885 | 39,665 | 40,918 | 3% |
| Temiskaming District * | 37,807 | 34,442 | 33,283 | -12% |
| Rainy River District | 23,138 | 22,109 | 21,564 | -7% |
| Sudbury District * | 23,831 | 22,894 | 21,392 | -10% |
| *Sables-Spanish Rivers* | *3,535* | *3,245* | *3,237* | *-8%* |
| **Manitoulin District *** | **11,747** | **12,679** | **13,090** | **11%** |

* Northeastern Ontario Districts
Source: Statistics Canada 1991, 2001, 2006.

Although the overall population in northeastern Ontario declined by almost 6% between 1996 and 2006, the Aboriginal population increased from 28,105 to 49,265 or 75%. The Aboriginal population currently represents about 10% of the total population in northeastern Ontario. In comparison, the Aboriginal population represents approximately 2% of the provincial population (Statistics Canada, 2006).[4]

## 2.3 Economic Profile

### *Employment by Industry Sector*

The North American Industry Classification System (NAICS) is an industry classification system developed by the Statistical agencies of Canada, Mexico and the United States. The classification system was created against the background of the North American Free Trade Agreement and was designed to provide common definitions of the industrial structure of the three countries and a common statistical framework to facilitate analysis of the three economies. NAICS organizes Canadian industries into distinguishable categories, or classifications. At the greatest level of aggregation, these industries are divided into 20 separate categories as shown in Table 2.2.

In 2006, the health care and social assistance sector was the largest employment sector in the Study Area with 8,010 jobs or 13% of the total jobs in the Study Area (Table 2.2). The other top ranking sectors in the Study Area in terms of total jobs include retail trade with 7,735 jobs (12%), manufacturing with 7,170 jobs (12%), accommodation and food services with 5,185 jobs (8%), public administration with 4,715 jobs (8%), and educational services with 4,680 jobs (7.5%). Agriculture directly employed a total of 620 people (i.e. on farm jobs) or about 1% of the total jobs in the Study Area in 2006.

The employment profile for the Study Area is fairly comparable to northern Ontario as whole with respect to the distribution of the workforce across the 20 industry sectors. One notable difference however is the manufacturing sector which accounts for close to 12% of the workforce in the Study Area compared to 9% for northern Ontario as a whole. Compared to the province as a whole, the Study Area has a higher proportion of jobs in forestry and logging, health care and social assistance, public administration, and accommodation and food service sectors and a lower proportion of jobs in manufacturing, wholesale trade, and professional services, and finance and insurance services.

Within the Study Area, the local economies vary somewhat with respect to the leading industry sectors by jobs. In Algoma District the top ranking sectors in order of the total number of jobs are health care and social assistance, retail trade, manufacturing, accommodation and food services, and educational services. In Manitoulin District the

[4] The Aboriginal population represents about 5.5% of the total population in Parry Sound and Temiskaming Districts, 6% of the population in the City of Greater Sudbury, 9% of the population in Nipissing District, 11% of the population in Algoma District, 12% of the population in Cochrane District, 14% of the population in Sudbury District, and 39% of the population in Manitoulin District. The Aboriginal population represents about 13% of the total northern Ontario population (Statistics Canada, 2006).

top ranking sectors in order of the total number of jobs are health care and social assistance, retail trade, public administration, accommodation and food services, and construction. Whereas agriculture accounts for about 1% of the jobs in Algoma District, it accounts for almost 4% of the jobs in Manitoulin District and close to 3% of the jobs in Sables-Spanish Rivers. Additional details are presented in Table 2.2.

With respect to the change in job numbers between 2001 and 2006, the total number of jobs in the Study Area increased from 60,915 in 2001 to 62,420 in 2006 (Table 2.3). The industry sectors that experienced the greatest job growth in the Study Area between 2001 and 2006 include administrative and support, waste management, and remediation services (+1,535 jobs or 66% growth), health care services (+765 jobs, 11%), public administration (+470 jobs, 11%), art, entertainment and recreation (+275 jobs, 17%), and educational services (+235 jobs, 5%).

The industry sectors that experienced the greatest job losses in the Study Area between 2001 and 2006 include manufacturing (-1,035 jobs or 13% decline), accommodation and food services (-540 jobs, 9%), finance and insurance (-230 jobs, 16%), agriculture (-185 jobs, 23%), and forestry and logging (-150 jobs, 13% decline).

Although the number of full-time jobs in agriculture in the Study Area declined by 185 between 2001 and 2006, it is important to recognize that the decline in job numbers does not reflect trends in farm productivity which is increasing. It is also important to recognize the growing part-time employment activity associated with agriculture. Farm productivity in the Study Area is profiled in Section 5 of this report.

### *Recent Labour Market Developments*

In the fall of 2008, Canada began to experience a labour market decline as the economy became caught in the global economic recession. Since October 2008, total employment in Canada has fallen by 2.4% (approximately 436,000 full time jobs). Employment has fallen the most for youths aged 15 to 24 (particularly students) and men aged 25 to 54.[5]

The majority of job losses have occurred in manufacturing, construction, and transportation and warehousing. Employment in manufacturing at the national level has dropped by 11% (218,000 jobs) since October 2008 (Statistics Canada, Aug. 7, 2009).

Job losses in Ontario have been particularly high given the concentration of manufacturing activities in the province. Total job losses in Ontario between October 2008 and June 2009 amounted to approximately 232,000 of which 126,000 were in manufacturing (Statistics Canada, July 10, 2009).

[5] The national unemployment rate in July 2009 was 8.6%, the highest rate since 1989. The national unemployment rate for students aged 15 to 24 in July 2009 was almost 21% which is the highest July unemployment rate for students since comparable data was collected in 1977.

Between June 2008 and June 2009, northeastern Ontario recorded a net loss of approximately 12,700 full time and part time jobs. The labour force contracted by 3,500 due to workers leaving the labour force. The unemployment rate in northeastern Ontario increased from 5.7% in June 2008 to 9.1% in June 2009. During the same period the provincial unemployment rate increased from 6.5% to 9.4%.

The labour market in northeastern Ontario is continuing to contract as both the labour force and the population declines (Statistics Canada, June 2009).[6]

[6] One of the sectors particularly hard hit in the region in recent years is the forest product industry. Since 2006, a number of firms in northern Ontario have experienced contraction and/or closure. The primary reasons associated with the downturn include weak demand/poor market conditions (e.g. declining demand for newsprint, downturn in the U.S. housing market), and the rapid rise and appreciation of the Canadian dollar (Statistics Canada, June 2009; Statistics Canada, January 2009). Despite the downturn in the forestry sector, the industry remains an important element of the regional economy and experts suggest that the future potential of the sector may be linked to capitalizing on opportunities such as promoting value-added opportunities and working more closely with Aboriginal populations (Moazzami, 2006).

**Table 2.2: Employment by NAICS Industrial Sector, 2006.**

| NAICS Industrial Sector [a] | Ontario | | Northern Ontario Region | | Total Study Area | | Algoma District | | Manitoulin District | | Sables-Spanish Rivers | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # jobs | % | # jobs | % | # jobs | % | # jobs | % | # jobs | % | # jobs | % |
| All industries | 6,473,735 | 100% | 366,020 | 100% | 62,420 | 100.0% | 55,215 | 100.0% | 5,765 | 100.0% | 1,440 | 100.0% |
| Agriculture | 101,210 | 1.6% | 3,070 | 0.8% | 620 | 1.0% | 375 | 0.7% | 205 | 3.6% | 40 | 2.8% |
| Fishing, hunting and trapping | 1,355 | 0.02% | 375 | 0.1% | 145 | 0.2% | 120 | 0.2% | 25 | 0.4% | 0 | 0.0% |
| Forestry and logging | 11,780 | 0.2% | 6,955 | 1.9% | 990 | 1.6% | 850 | 1.5% | 85 | 1.5% | 55 | 3.8% |
| Mining and oil and gas extraction | 25,445 | 0.4% | 13,395 | 3.7% | 630 | 1.0% | 450 | 0.8% | 115 | 2.0% | 65 | 4.5% |
| Utilities | 50,215 | 0.8% | 3,510 | 1.0% | 420 | 0.7% | 365 | 0.7% | 55 | 1.0% | 0 | 0.0% |
| Construction | 384,780 | 5.9% | 22,275 | 6.1% | 3,645 | 5.8% | 3,045 | 5.5% | 510 | 8.8% | 90 | 6.3% |
| Manufacturing | 899,670 | 13.9% | 32,525 | 8.9% | 7,170 | 11.5% | 6,750 | 12.2% | 240 | 4.2% | 180 | 12.5% |
| Wholesale trade | 307,465 | 4.7% | 9,575 | 2.6% | 1,030 | 1.7% | 910 | 1.6% | 70 | 1.2% | 50 | 3.5% |
| Retail trade | 720,235 | 11.1% | 46,135 | 12.6% | 7,735 | 12.4% | 6,850 | 12.4% | 645 | 11.2% | 240 | 16.7% |
| Transportation and warehousing | 307,475 | 4.7% | 20,765 | 5.7% | 3,295 | 5.3% | 2,695 | 4.9% | 490 | 8.5% | 110 | 7.6% |
| Information and cultural industries | 172,800 | 2.7% | 5,335 | 1.5% | 865 | 1.4% | 795 | 1.4% | 70 | 1.2% | 0 | 0.0% |
| Finance and insurance | 316,170 | 4.9% | 8,355 | 2.3% | 1,215 | 1.9% | 1,090 | 2.0% | 85 | 1.5% | 40 | 2.8% |
| Real estate and rental and leasing | 126,440 | 2.0% | 4,795 | 1.3% | 860 | 1.4% | 825 | 1.5% | 25 | 0.4% | 10 | 0.7% |
| Professional, scientific and technical services | 471,620 | 7.3% | 12,715 | 3.5% | 1,980 | 3.2% | 1,770 | 3.2% | 165 | 2.9% | 45 | 3.1% |
| Management of companies and enterprises | 8,440 | 0.1% | 105 | 0.03% | 50 | 0.1% | 35 | 0.1% | 15 | 0.3% | 0 | 0.0% |
| Administrative and support services | 314,005 | 4.9% | 16,410 | 4.5% | 3,865 | 6.2% | 3,680 | 6.7% | 160 | 2.8% | 25 | 1.7% |
| Educational services | 433,485 | 6.7% | 30,030 | 8.2% | 4,680 | 7.5% | 4,275 | 7.7% | 365 | 6.3% | 40 | 2.8% |
| Health care and social assistance | 611,745 | 9.4% | 47,650 | 13.0% | 8,010 | 12.8% | 6,900 | 12.5% | 945 | 16.4% | 165 | 11.5% |
| Arts, entertainment and recreation | 140,830 | 2.2% | 6,945 | 1.9% | 1,900 | 3.0% | 1,705 | 3.1% | 145 | 2.5% | 50 | 3.5% |
| Accommodation and food services | 414,975 | 6.4% | 28,830 | 7.9% | 5,185 | 8.3% | 4,550 | 8.2% | 525 | 9.1% | 110 | 7.6% |
| Other services (except public administration) | 303,510 | 4.7% | 18,135 | 5.0% | 3,465 | 5.6% | 3,210 | 5.8% | 230 | 4.0% | 25 | 1.7% |
| Public administration | 350,070 | 5.4% | 28,185 | 7.7% | 4,715 | 7.6% | 3,985 | 7.2% | 615 | 10.7% | 115 | 8.0% |

[a] The North American Industry Classification System (NAICS) is an industry classification system developed by the Statistical agencies of Canada, Mexico and the United States. The NAICS classification system replaces the Standard Industrial Classification system which was used by Statistics Canada prior to the 2001 Census. The industry classification refers to the general nature of the business carried out in the establishment where the person worked. If the person did not have a job during the week (Sunday to Saturday) prior to enumeration (May 2006), the data relate to the job of longest duration since January 1, 2005. Persons with two or more jobs were required to report the information for the job at which they worked the most hours. Source: Statistics Canada, 2006.

**Table 2.3: Employment by Industrial Sectors for the Study Area, 2001-2006**

| NAICS Industrial Sector | 2001 | | 2006 | | Change 2001 to 2006 | |
|---|---|---|---|---|---|---|
| | # jobs | % | # jobs | % | Change in jobs by # | Change in jobs by % |
| All industries | 60,915 | 100.0% | 62,420 | 100.0% | 1,505 | 2.5% |
| Agriculture | 805 | 1.3% | 620 | 1.0% | -185 | -23.0% |
| Fishing, hunting and trapping | 110 | 0.2% | 145 | 0.2% | 35 | 31.8% |
| Forestry and logging | 1,140 | 1.9% | 990 | 1.6% | -150 | -13.2% |
| Mining and oil and gas extraction | 655 | 1.1% | 630 | 1.0% | -25 | -3.8% |
| Utilities | 425 | 0.7% | 420 | 0.7% | -5 | -1.2% |
| Construction | 3,545 | 5.8% | 3,645 | 5.8% | 100 | 2.8% |
| Manufacturing | 8,205 | 13.5% | 7,170 | 11.5% | -1,035 | -12.6% |
| Wholesale trade | 1,140 | 1.9% | 1,030 | 1.7% | -110 | -9.6% |
| Retail trade | 7,780 | 12.8% | 7,735 | 12.4% | -45 | -0.6% |
| Transportation and warehousing | 3,105 | 5.1% | 3,295 | 5.3% | 190 | 6.1% |
| Information and cultural industries | 810 | 1.3% | 865 | 1.4% | 55 | 6.8% |
| Finance and insurance | 1,445 | 2.4% | 1,215 | 1.9% | -230 | -15.9% |
| Real estate and rental and leasing | 800 | 1.3% | 860 | 1.4% | 60 | 7.5% |
| Professional, scientific and technical services | 1,970 | 3.2% | 1,980 | 3.2% | 10 | 0.5% |
| Management of companies and enterprises | 40 | 0.1% | 50 | 0.1% | 10 | 25.0% |
| Administrative and support, waste management and remediation services | 2,330 | 3.8% | 3,865 | 6.2% | 1,535 | 65.9% |
| Educational services | 4,445 | 7.3% | 4,680 | 7.5% | 235 | 5.3% |
| Health care and social assistance | 7,245 | 11.9% | 8,010 | 12.8% | 765 | 10.6% |
| Arts, entertainment and recreation | 1,625 | 2.7% | 1,900 | 3.0% | 275 | 16.9% |
| Accommodation and food services | 5,725 | 9.4% | 5,185 | 8.3% | -540 | -9.4% |
| Other services (except public administration) | 3,330 | 5.5% | 3,465 | 5.6% | 135 | 4.1% |
| Public administration | 4,245 | 7.0% | 4,715 | 7.6% | 470 | 11.1% |

Source: Statistics Canada, 2001, 2006.

### *Educational Attainment*

In 2005, approximately 15% of the population (25 to 64 years of age) in the Study Area had a university certificate or degree while a further 25% had a college or other non-university certificate/diploma. Approximately 28% of the population reported that their highest educational attainment was a high school certificate while 17% of the population reported that they did not have a certificate/diploma/degree (Table 2.4).

A slightly higher proportion of the population in the Study Area has a university certificate or degree compared to northern Ontario as whole (15% vs. 14%) and a much lower proportion compared to the province (26%).

**Table 2.4: Total Population 25 to 64 Years of Age by Highest Education Certificate, 2005**

| | Ontario | | Northern Ontario Region | | Total Study Area | | Algoma District | | Manitoulin District | | Sables-Spanish Rivers | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Total population | 6,638,330 | 100% | 400,705 | 100% | 71,055 | 100% | 62,385 | 100% | 6,790 | 100% | 1,880 | 100% |
| No certificate, diploma or degree | 899,530 | 14% | 76,170 | 19% | 12,155 | 17% | 10,160 | 16% | 1,440 | 21% | 555 | 30% |
| Certificate, diploma or degree | 5,738,800 | 86% | 324,525 | 81% | 58,890 | 83% | 52,225 | 84% | 5,345 | 79% | 1,320 | 70% |
| High school certificate or equivalent | 1,660,665 | 25% | 101,075 | 25% | 19,580 | 28% | 17,350 | 28% | 1,715 | 25% | 515 | 27% |
| Apprenticeship or trades certificate or Diploma | 581,125 | 9% | 51,405 | 13% | 8,555 | 12% | 7,405 | 12% | 900 | 13% | 250 | 13% |
| College, CEGEP or other non-university certificate or diploma | 1,461,630 | 22% | 102,635 | 26% | 17,980 | 25% | 15,845 | 25% | 1,710 | 25% | 425 | 23% |
| University certificate, diploma or degree | 2,035,370 | 31% | 69,395 | 17% | 12,765 | 18% | 11,620 | 19% | 1,015 | 15% | 130 | 7% |
| University certificate or diploma below bachelor level | 309,945 | 5% | 11,300 | 3% | 2,215 | 3% | 1,990 | 3% | 205 | 3% | 20 | 1% |
| University certificate or degree | 1,725,425 | 26% | 58,095 | 14% | 10,550 | 15% | 9,635 | 15% | 810 | 12% | 105 | 6% |
| Bachelor's degree | 1,057,200 | 16% | 36,230 | 9% | 6,965 | 10% | 6,295 | 10% | 590 | 9% | 80 | 4% |
| University certificate or diploma above bachelor level | 209,345 | 3% | 10,615 | 3% | 1,685 | 2% | 1,580 | 3% | 105 | 2% | 0 | 0% |
| Degree in medicine, dentistry, veterinary medicine or optometry | 47,815 | 1% | 1,650 | 0.4% | 290 | 0.4% | 235 | 0.4% | 45 | 0.7% | 10 | 0.5% |
| Master's degree | 351,925 | 5% | 8,000 | 2% | 1,415 | 2% | 1,335 | 2% | 70 | 1% | 10 | 1% |
| Earned doctorate | 59,140 | 1% | 1,560 | 0.4% | 180 | 0.3% | 180 | 0.3% | 0 | 0.0% | 0 | 0.0% |

Source: Statistics Canada, 2006.

### *Household Income*

Table 2.5 shows the distribution of households by household income categories for the Study Area, northern Ontario and Ontario in 2005. The distribution is organized according to 11 different income categories, ranging from less than $10,000 to $100,000 or more.

In 2005, the Study Area was very comparable to the profile of households by household income categories for northern Ontario as a whole. However, compared to the province the Study Area has a lower proportion of households with incomes of $100,000 or more (15% vs. 24%). In 2005, the average household income in Ontario was almost $78,000 compared to $59,829 in Algoma District, $48,091 in Manitoulin District, and $49,836 in Sables-Spanish Rivers.

**Table 2.5: Household Income in 2005 of Private Households**

| Household income in 2005 of private households | Ontario | | Northern Ontario Region | | Total Study Area | | Algoma District | | Manitoulin District | | Sables-Spanish Rivers | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| All households | 4,555,025 | 100% | 305,465 | 100% | 56,780 | 100% | 50,010 | 100% | 5,475 | 100% | 1295 | 100% |
| Under $10,000 | 198,235 | 4% | 14,175 | 5% | 2,810 | 5% | 2,310 | 5% | 420 | 8% | 80 | 6% |
| $10,000 to $19,999 | 398,830 | 9% | 37,580 | 12% | 7,805 | 14% | 6,705 | 13% | 925 | 17% | 175 | 14% |
| $20,000 to $29,999 | 408,130 | 9% | 32,785 | 11% | 6,540 | 12% | 5,655 | 11% | 690 | 13% | 195 | 15% |
| $30,000 to $39,999 | 447,475 | 10% | 34,085 | 11% | 7,085 | 12% | 6,155 | 12% | 740 | 14% | 190 | 15% |
| $40,000 to $49,999 | 419,525 | 9% | 30,870 | 10% | 6,110 | 11% | 5,335 | 11% | 665 | 12% | 110 | 8% |
| $50,000 to $59,999 | 385,555 | 8% | 25,835 | 8% | 4,660 | 8% | 4,055 | 8% | 485 | 9% | 120 | 9% |
| $60,000 to $69,999 | 356,990 | 8% | 23,800 | 8% | 4,455 | 8% | 3,910 | 8% | 405 | 7% | 140 | 11% |
| $70,000 to $79,999 | 324,835 | 7% | 20,695 | 7% | 3,630 | 6% | 3,330 | 7% | 265 | 5% | 35 | 3% |
| $80,000 to $89,999 | 282,910 | 6% | 18,440 | 6% | 3,010 | 5% | 2,665 | 5% | 280 | 5% | 65 | 5% |
| $90,000 to $99,999 | 238,720 | 5% | 14,585 | 5% | 2,330 | 4% | 2,075 | 4% | 200 | 4% | 55 | 4% |
| $100,000 and over | 1,093,810 | 24% | 52,590 | 17% | 8,335 | 15% | 7,815 | 16% | 395 | 7% | 125 | 10% |
| Median household income | $60,455 | | NA | | NA | | $47,567 | | $39,645 | | $40,527 | |
| Average household income | $77,967 | | NA | | NA | | $59,829 | | $48,091 | | $49,836 | |

Source: Statistics Canada, 2006.

## 3.0 Land Base Resources in Northeastern Ontario

This chapter of the report provides an overview of the different land base and agricultural community resources in northeastern Ontario. Land base resources include soil resources and climate conditions while community resources refer to the organizations and institutions that support agriculture in the region.

## 3.1 Physical Geography and Agricultural Soils

The topography of northeastern Ontario is characterized by the Canadian Shield which underlies much of the area. The region features bedrock outcropping, large areas of poorly drained, swampy conditions and substantial accumulations of glacial-fluvial deposits. Deposits laid down by glacial streams and lakes have strongly influenced soil development in the region including the composition of present day forests which continue to be an important element of the local economy (Baldwin et al., 2000).[7]

Despite the limitations on agricultural capacity, there are pockets of good agricultural soil in northern parts of Ontario. Under the Canadian agricultural land use classification system, Class 1 soils are of prime suitability for crop production while Class 2 and 3 soils are considered suitable for sustained production of common field crops if specified management practices are observed. Soils of Classes 1, 2, and 3 that are free from severe constrains and can support economically viable agricultural production are referred to as 'dependable agricultural land'. Marginal lands with Class 4 soils are also used for agricultural activity including limited crop production and permanent pasture. Although northern Ontario does not possess any Class 1 soils it does feature areas with Class 2 to 4 soils.

### *Algoma and Sudbury District*

In the northern parts of Ontario, podzolic soils are abundant in well and imperfectly drained areas. The podzolic soils of the Canadian Shield are generally thin, acidic and unproductive. As a result of these soil conditions, agricultural production in this region requires agricultural limestone and drainage to be productive.

Despite the limitations on agricultural capacity, there are pockets of good agricultural soil in Algoma and Sudbury District, mainly limited to lake flats and river valleys in the southern edge of the region. In Algoma, the bulk of agricultural production is contained in an area that begins just north of Sault Ste. Marie and extends south and east to Blind River. A considerable amount of agricultural production also occurs on St. Joseph

[7] Historically, the economy of northwestern Ontario has been largely dependent on the forestry sector in contrast to northeastern Ontario which has strong linkages to both the forestry and mining sectors. Northeastern Ontario also has a significantly larger population base (five times greater in density and proximity to large urban markets) which helps sustain a more diverse economy than northwestern Ontario (Rosehart, 2008. p. 8).

Island. In the southwest portion of Sudbury District agricultural production is largely concentrated in the Township of Sables-Spanish Rivers.

***Manitoulin District***

Manitoulin Island features a number of pockets of good agricultural land. Agricultural soils on Manitoulin are derived from calcitic or dolomitic limestone and are generally pH neutral. The Island features a number of different soil types with silt and clay loams being the most prevalent. Most of the productive soils fall into the range of Class 2 to class 4 soil-type, varying with climate, topography and stoniness. Much of the unimproved pastureland on the Island consists of soils that are less than a foot deep over bedrock. Over the past 20 years the region has seen a considerable amount of land upgraded through tile drainage.

Summary descriptions of soil classes 2 to 4 are as follows (Environment Canada, 1980):

***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.

Maps of the soil capability for agriculture in the Study Area are presented in Appendix A.

## 3.2 Climate and Crop Heat Units

Climate conditions coupled with soil conditions play a significant role in determining the type of agricultural activity in northeastern Ontario.

### *Algoma District and Sudbury District*

The climate and growing season across the southern portion of Algoma District is influenced by Lake Huron. Frost-free days range from 100-120 in most of the agricultural region (OMAFRA, February 2001). The annual precipitation, as reported at the Sault Ste. Marie weather station, is just over 1,000mm of which 345mm falls as snow (Table 3.1).

The climate in the southern portion of Sudbury District is one of the warmest in northern Ontario. The mean annual length of the growing season is 183 days with a frost-free period of 112 days. On average, the last spring frost is May 15 and the earliest fall frost is September 25 (OMAFRA, February 2001). The annual precipitation, as reported at the Sudbury weather station, is approximately 899mm of which 274mm falls as snow (Table 3.1).

### *Manitoulin District*

Manitoulin Island is located in Lake Huron and the growing season on the Island is influenced by the surrounding bodies of water. The climate is temperate with relatively late fall frosts and 120-130 frost-free days (OMAFRA, February, 2001). The annual precipitation, as reported at the Gore Bay weather station, is approximately 809mm of which 267mm falls as snow (Table 3.1).

The following table shows the climate normals for several locations in the Study Area. The climate normals are based on Canadian climate stations with at least 15 years of data between 1971 and 2000 (Environment Canada, 2008).

**Table 3.1: Climate Normals for Select Areas in the Study Area (1971-2000).**

| Weather Station | Month or Year | Temperature | | | | Precipitation | | |
|---|---|---|---|---|---|---|---|---|
| | | Daily Average (°C) | Standard Deviation | Daily Maximum (°C) | Daily Minimum (°C) | Rainfall (mm) | Snowfall (cm) | Total Precipitation (mm) |
| Sault Ste. Marie [a] | January | -10.1 | 2.8 | -5.8 | -14.2 | 7.9 | 93.4 | 101.2 |
| | July | 18.3 | 1.4 | 24.1 | 12.4 | 77.5 | 0 | 77.5 |
| | Year | NA | NA | NA | NA | 665.5 | 345 | 1010.5 |
| Gore Bay [b] | January | -10 | 3.3 | -5.1 | -14.8 | 11.7 | 67.1 | 53.7 |
| | July | 19.1 | 1.3 | 24.2 | 13.9 | 52 | 0 | 52 |
| | Year | 5.2 | 4.8 | 9.8 | 0.6 | 625 | 267.3 | 808.9 |
| Sudbury [c] | January | -13.6 | 3 | -8.4 | -18.6 | 12.5 | 63.8 | 68.6 |
| | July | 19 | 1.3 | 24.8 | 13.3 | 76.6 | 0 | 76.6 |
| | Year | 3.7 | 0.9 | 8.8 | -1.4 | 656.5 | 274.4 | 899.3 |

[a] Sault Ste. Marie A: Latitude = 46° 31' N; Longitude = 84° 19' W; Elevation = 212 m.
[b] Gore Bay: Latitude = 45° 52' N; Longitude = 82° 34' W; Elevation = 193 m.
[c] Sudbury A: Latitude = 46° 37' N; Longitude = 80° 48' W; Elevation = 347 m.
Source: Environment Canada, 2008

The Crop Heat Unit (CHU) system 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.[8]

Crop Heat Units can fluctuate from year to year depending on weather patterns and some areas can experience higher CHU zones. Latitude, elevation and distance to the Great Lakes all affect daily temperatures and have a marked influence on the accumulated CHU across Ontario. The change between CHU isolines is gradual.

The slope and soil type in an area or site can 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.

[8] 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°C (50°F) as the base temperature and 30°C (86°F) as the optimum, because warm-season crops do not develop when daytime temperatures fall below 10°C and they develop fastest at about 30 degrees. The nighttime relationship uses 4.4°C (40°F) as the base temperature and does not specify an optimum temperature because nighttime temperatures very seldom exceed 25°C in Ontario. Daily CHU are calculated by using the average of the two daily values.

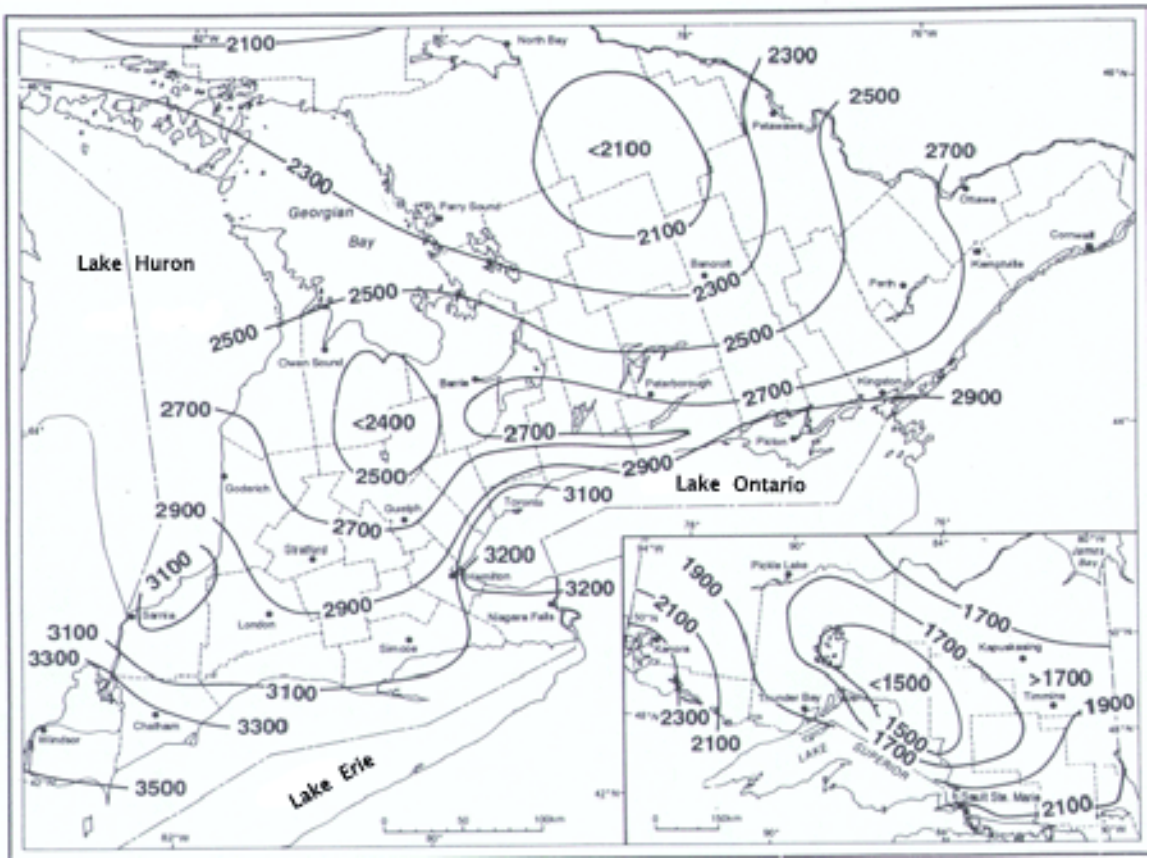
The accumulated CHU available for crops such as corn and soybeans across Ontario are shown in Map 3.1.

Algoma District average CHU's range from 2100 to 2300 with 1900 to 2100 units in the highland areas north of the District. In protected portions of the south region, units can approach 2600 due to the extended frost-free period.

Manitoulin Island has two distinct growing zones which run parallel on a west-east basis and CHU's range from 2300 to 2500.

Additional details on crop production activity in the Study Area are provided in section 5.6.

**Map 3.1: Average Accumulated Crop Heat Units (CHU) Available for Warm-Season Crops in Ontario.**




Source: Agriculture and Agri-Food Canada. http://res2.agr.ca/ecorc/clim3/resu-ana_e.htm

## 3.3 Climate Change

Climate change including global warming is now widely recognized as a major environmental issue with economic, health and safety, security, and other dimensions (United Nations Environment Programme, 2009).[9] Agri-food is an economic sector which could be especially sensitive to long-term climatic change.

In a climate change model used by Colombo et al. (2007) the average summer temperature in most of northeastern Ontario is expected to increase by 1 to 2$^{o}$C by 2011.[10] The same scenario predicts that average summer temperatures in the southern part of northeastern Ontario will increase by 3 to 4$^{o}$C starting around 2071. With respect to precipitation, between 2011 and 2040, warm season precipitation will decrease by up to 10% in the area north of Hearst and Kapuskasing. However, beginning 2041, most of northeastern Ontario will receive the same or slightly more precipitation as it did from 1971-2000 (p.15).

With respect to the cold season, the same climate change scenario noted above predicts that the average winter temperature in the southern part of northeastern Ontario will be 4 to 5$^{o}$C warmer by 2071. With respect to precipitation, snowfall in northeastern Ontario has historically been greatest in the snowbelt to the lee of Lake Superior, between Wawa and Sault Ste. Marie. Cold season precipitation by in this area is projected to increase by up to 20% by 2071. While snowfall in Montreal River and areas near White River, Hearst, and James Bay will increase, large parts of the northeast will receive significantly less snow than has been the historical norm. For example, the corridor running north from Espanola and Mattawa to Moosonee will get up to 20% less cold season precipitation by 2011 (p.15).

Climate change is expected to have major implications for the length of the growing season, the variety of crops grown, as well as grain yields in northern Ontario. In examining climate change scenarios for Canada, Qian et al. (2005) predict that the number of frost-free days is expected to increase by 30-45 days in northern Ontario by the middle of the century. The predicted changes for the frost dates indicate an earlier ending of frosts in spring and a later starting of frosts and killing frosts in the fall.

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[9] 'Climate change' refers to a change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to internal processes and/or external forcings. Some external influences, such as changes in solar radiation and volcanism, occur naturally and contribute to the total natural variability of the climate system. Other external changes, such as the change in composition of the atmosphere that began with the industrial revolution, are the result of human activity (Hegerl et al., 2007).

[10] Climate models predict the effect of higher greenhouse gases based on increasing amounts of heat trapped in the atmosphere. Increased heat affects virtually all aspects of weather, including precipitation, winds, air pressure, and humidity. Many global climate models have been developed. Each climate model is unique, based on different assumptions, and produces somewhat different projections of future climate when provided the same data. The scenario presented here anticipates greenhouse gas levels by the century's end reaching 1,320 parts per million by volume in $CO_2$ equivalents and a total human population of 15 billion by 2100 (Colombo, McKenney, Lawrence and Gray, 2007).

CHU ratings in some parts of northern Ontario will be altered as a result of the expected climate change. For example, in the area around Fort Frances and Thunder Bay the CHU rating will increase by almost 400 units between 2010 and 2039 and almost 800 units between 2040 and 2069 (Bootsma, 2002). According to Bootsma et al (2001), grain corn yields could potentially increase by 0.64 tonnes per hectare with each increase of 100 CHU.

In conducting a regional assessment of the implications of climatic change on land resource potential for crop production in Ontario, Smit et al. (1989) reported the following effects for northern Ontario:

- Grain corn yields would increase to such an extent that it would be feasible to obtain a high return to investment on well-drained loamy soils, and on lands that have a low drought tolerance. On lands where artificial land drainage has lessened the limitations imposed by excessive moisture conditions yields would be sufficient to obtain a modest return (p.166). In northern Ontario, grain corn would become an economically viable crop on about 70% of the land base that is cleared and available for agriculture (p.168).

- The longer growing season and warmer temperatures in northern Ontario would create new opportunities for soybeans. Land which is well-drained would be especially well-suited for soybeans, and a modest return to investment could be expected on those lands where moisture imposes moderate limitations on crop production (p. 168). In northern Ontario, where current climatic conditions prohibit the crop's production, soybeans would be a profitable crop on approximately 58% of the regional resource base (p.170).

- Considerable increases in barley yields could be expected throughout the region, but lands suffering from excessive moisture would continue to be economically unsuitable for the small grains (p.167).

- Opportunities for hay production would be considerably smaller than the effects on other field crops in northern Ontario. Although the longer growing season would permit an extra growth cycle in other parts of the province, in northern Ontario the number of cutting periods would not change under the altered climate and the production prospects for hay would not differ appreciably from the present (p.168).

## 4.0 Agricultural Community Resources in the Study Area

A number of institutions and organizations work together to promote agriculture in northeastern Ontario. This section of the report provides a very brief introduction to some of these organizations to provide a sense of the variety and scope of activities taking place in the Study Area.

### *Federation of Agriculture*

The Study Area has two local Federations of Agriculture: Algoma Federation of Agriculture and Manitoulin/North Shore Federation of Agriculture. In general, these groups work to promote agriculture to rural and urban residents and ensure that government officials are aware of the issues / challenges facing the sector as well as the opportunities for further development and growth.

### *Soil and Crop Improvement Association*

Districts in northern Ontario are also represented by Soil and Crop Improvement Associations. There are two local Associations in the Study Area: Algoma District and Manitoulin District. In general, these groups work to enhance producer education and practices, develop and deliver stewardship programs, and address consumer concerns on agricultural environmental issues. The North Eastern Ontario Soil and Crop Improvement Associations (NEOSCIA) in northeastern Ontario also work collectively to publish a regular newsletter, *Breaking Ground*, which informs agri-related stakeholders about upcoming professional development and training sessions, upcoming agriculture commodity group meetings, results from crop research stations, and information from government agencies.

A current NEOSCIA research interest is determining the potential for farm biomass production for energy generation in every northeastern Ontario District (Breaking Ground. Spring 2009).

### *Agricultural Commodity Groups / Organizations*

In addition to the local Federations of Agriculture and the local Soil and Crop Improvement Associations, there are a number of agricultural commodity groups and organizations promoting agriculture in the region such as the Algoma Cattlemen's Association, the Manitoulin Cattlemen’s Association, Algoma Milk Producers, the Manitoulin / West Sudbury Milk Committee, Algoma Sheep and Lamb Producers, and the Algoma Horse Association.

Other important community organizations include Agricultural Societies and local farmers’ markets which are profiled in greater detail under the theme of agri-tourism in Chapter 6 of the report.

### *Agri-Food Promotion / Education Groups*

Northern Ontario Agri-Food Education and Marketing Inc. (NOAFEM)
NOAFEM is a non-profit group based in Wahnapitea that supports agriculture in the region through educating consumers, processors and retailers on the agri-food industry in northern Ontario and assisting producers with marketing initiatives. Additional details on NOAFEM can be accessed through the following weblink: www.norontagrifood.org/

Algoma Food Network
The Algoma Food Network is dedicated to building and supporting an autonomous, sustainable, healthy, local food system. The organization works to educate residents about local food options and local food producers and to facilitate greater access for all residents to locally produced foods. Additional details on the Algoma Food Network can be accessed through the following weblink: http://algomafoodnetwork.wordpress.com/

Manitoulin Community Food Network
The Manitoulin Community Food Network is a volunteer group of farmers, educators, health care professionals, social service representatives, business people, and members of the general public, cooperating on Manitoulin Island to support and develop the community awareness, production and consumption of healthy, locally-produced food. Additional details on the Manitoulin Community Food Network can be accessed through the following weblink: www.mcfn.ca/index.html

Sudbury Food Connections
The mandate of Sudbury Food Connections (formerly known as the Sudbury Food Security Network) is to increase the accessibility of healthy food, involve the community in food security strategies, support local food production and distribution, and support sustainable development practices. Network members represent every sector of the food system, from farmers to consumers. In 2003, the organization participated in developing a Food Charter that was adopted by the City of Greater Sudbury in 2004 (Appendix B). The organization also developed a Community Food Security Indicators Baseline Report Card in 2005. Additional details on Sudbury Food Connections can be accessed through the following weblink:
http://communities.mysudbury.ca/Sites/foodsecurity/default.aspx

### *Research and Agri-Food Innovation*

Agriculture in northeastern Ontario has been aided by the research work of the New Liskeard Agricultural Research Station (NLARS). NLARS manages approximately 680 acres along with an additional 120 rented acres in and near New Liskeard. Research programs focusing on agronomy, beef and horticulture are all carried out at this central station. NLARS also operates the Verner Test Site in Nipissing District and the Emo Agricultural Research Station in Rainy River District. NLARS is managed by the University of Guelph Kemptville Campus.

Northern Ontario is a source of agri-food innovation. Since the Premier's Award for Agri-Food Innovation Excellence was established in 2006, several farms in the Study Area have been recognized for their innovation and contribution to the community and economy.[11]

- Burt Farm Country Meats – Manitoulin District (2006)
  Max Burt added meat processing and retail sales to his organic sow production operation. Burt learned how to cure and smoke the meat he was producing and he also converted workshop space into a retail outlet.

- Northern Quality Meats Ltd. - Algoma District (2007)
  Northern Quality Meats Ltd. developed a licensed composting facility to compost abattoir wastes for a provincially licensed and inspected abattoir. The innovation allowed for the continued operation of this producer-owned and operated business, offering an option for area farmers to process their livestock locally.

- Martin Farms - District of Manitoulin (2007)
  Martin Farms is a diversified beef operation that markets from gate-to-plate. The operation includes a Shorthorn and Angus beef herd. It also custom boards cows and sells purebred breeding stock and commercial cattle, which are finished and marketed in the farm's own small beef feedlot.

- Burt Farm - District of Manitoulin (2007)
  Max Burt introduced a small-scale biodiesel facility to his mixed livestock farm and on-site abattoir operation with the potential to meet his energy requirements.

- Meeker's AquaCulture - Manitoulin District (2008)
  Meeker's AquaCulture developed environmentally-friendly compost by mixing by-products from Ontario's fish and forestry industries.[12]

- Penokean Hills Farms Inc. - Algoma District (2008)
  Penokean Hills Farms is a group of farmers who raise cattle without the use of growth hormones or antibiotics. The farmers also generate extra income by growing feed crops that are adapted to northern Ontario conditions. Penokean Hills Farms produces and markets high-quality boxed frozen and fresh beef cuts.

[11]The Premier's Award for Agri-Food Innovation Excellence is a five-year program that recognizes innovations that add value to existing products, create jobs and drive economic growth. As many as 55 regional awards, valued at $5,000 each, can be presented each year. Recipients of the Premier's Award (up to $100,000) and the Minister's Award (up to $50,000) are selected from the regional winners. Additional details on the Award can be accessed through OMAFRA website: http://www.omafra.gov.on.ca/english/premier_award/background.html

[12] The aquaculture industry makes an important contribution to community and regional economies in Ontario. The total farm gate value associated with Ontario cage culture operators (which are largely concentrated in the Manitoulin area) was $12.5 million in 2005. The total employment associated with this production activity amounted to 50 full-time equivalent jobs. With respect to the indirect impacts, the Ontario cage culture industry generated an additional $38.2 million in related sales and sustained a total of 179 full-time equivalent jobs (Cummings and Associates, 2007).

## 5.0 Profile of the Agriculture Sector in the Study Area

### 5.1 Introduction

This section presents a profile of the Agriculture Sector in the Study Area. Data for the analysis were drawn from the Census of Agriculture, which is conducted every five years. Agricultural activity in the Study Area is largely located in the following townships/towns in Algoma, Manitoulin, and Sudbury Districts:

Algoma District

- Macdonald, Meredith and Aberdeen Additional
- Laird
- Johnson
- Plummer Additional
- Huron Shores
- St. Joseph
- Sault Ste. Marie
- Algoma, Unorganized, North Part

Manitoulin District

- Northeastern Manitoulin and the Islands
- Gordon

Sudbury District [13]

- Sables-Spanish Rivers

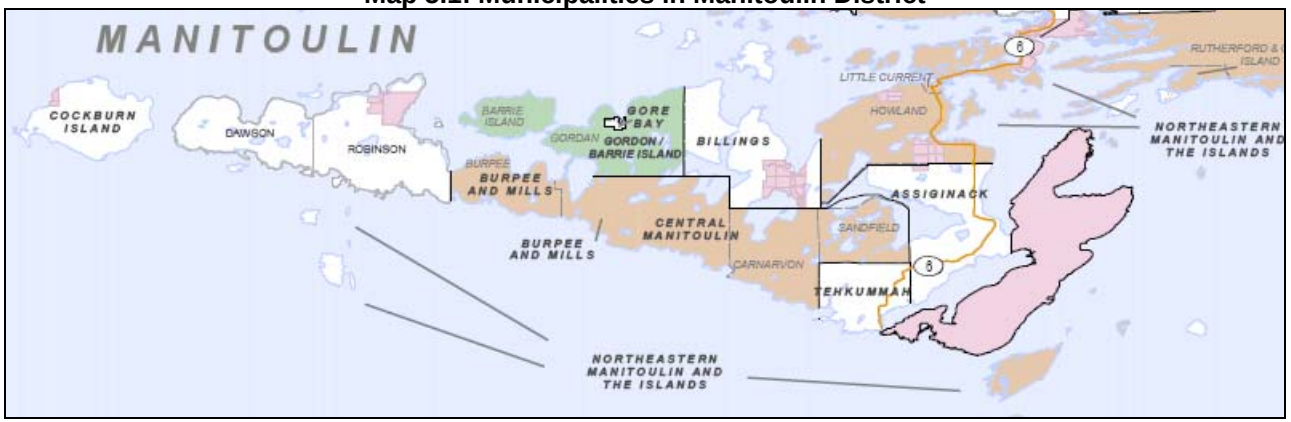
An analysis of the trends and changes in farmland area and farm size, farm types, farm productivity, farm receipts, and net revenues as well as farm capital is provided for the census years 1996, 2001 and 2006. Data for the Study Area are further compared to data at the regional (i.e. northern Ontario region) and provincial levels to provide further insight into the relative importance of the contribution of the Study Area to these economies.[14]

The Census data was reviewed with a small group of agri-sector stakeholders from the Algoma - Manitoulin region in December 2009 to identify any discrepancies in the data as well as any major changes/trends in the local agriculture sector since the 2006 Census. The results are presented in section 5.15.

[13] The municipalities of French River, St. Charles, and Markstay-Warren in Sudbury District are part of the Blue Sky Region agricultural study area and the data for these municipalities is examined in Blue Sky Region Agricultural Sector Profile Report, October 2009.

[14] The Northern Ontario Agricultural Region includes the following Districts: Nipissing, Sudbury, Manitoulin, Temiskaming, Cochrane, Greater Sudbury Division, Algoma, Thunder Bay, Rainy River and Kenora.

**Map 5.1: Municipalities in Manitoulin District**




Source: Ministry of Municipal Affairs and Housing, 2009.

**Map 5.2: Select Municipalities in Algoma and Sudbury Districts**


Source: Ministry of Municipal Affairs and Housing, 2009.

## 5.2 Number of Farms, Farmland Area and Land Tenure

In 2006, the Study Area reported a total of 642 farms, down from 739 farms in 1996 (Table 5.1).[15] This represents a 13% decline across the region which is slightly lower than the rate of loss experienced across the northern Ontario region and Ontario as a whole (15%). Within the Study Area, Manitoulin District experienced the largest loss in absolute numbers (-58 farms) and the largest rate of loss (-18%) between 1996 and 2006.

**Table 5.1: Number of Farms in the Study Area, Northern Ontario, and Ontario, 1996-2006**

| | 1996 | 2001 | 2006 | Change # 1996-06 | Change % 1996-06 |
|---|---|---|---|---|---|
| Ontario | 67,520 | 59,728 | 57,211 | -10,309 | -15% |
| Northern Ontario | 2,915 | 2,635 | 2,479 | -436 | -15% |
| Study Area | 739 | 669 | 642 | -97 | -13.1% |
| Algoma District | 365 | 337 | 335 | -30 | -8.2% |
| Manitoulin District | 316 | 284 | 258 | -58 | -18.4% |
| Sables-Spanish Rivers | 58 | 48 | 49 | -9 | -15.5% |

Source: Statistics Canada, 1996, 2001, 2006.

Study Area farms reported a total of 292,359 acres of workable and non-workable (e.g. woodlands, wetlands, natural pastureland) farmland in 2006 (Table 5.2).[16] Between 1996 and 2006, the area of farmland reported in the Study Area declined by approximately 6,000 acres. Historically, the Study Area reported a much larger area of farmland. For example, in 1981, the Study Area reported just over 342,000 acres of farmland (113,791 acres in Algoma District, 204,199 acres in Manitoulin District, and 24,303 acres in Sables-Spanish Rivers).

While farm numbers have been consistently declining over the past few census periods, farm consolidation has resulted in larger farms. The average farm size in the Study Area increased from 404 acres to 455 acres or 13% between 1996 and 2006. During the same period the average farm size for northern Ontario increased from 352 acres to 412 acres (17%) while the average farm size for Ontario increased from 206 to 233 acres (13%).

Within the Study Area there is considerable variation in average farm size. On average, farms in Manitoulin District are the largest at 690 acres while farms in Algoma District are the smallest at 286 acres.

[15] Statistics Canada defines 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 nuts, 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).

[16] Statistics Canada associates the following land uses with farmland: land in crops, land in pasture, land occupied by farm buildings and yards, land used for other farm-related activities such as farm woodlots.

The farm size profile for Sables-Spanish Rivers is different from the Manitoulin and Algoma Districts in that there was a small increase in the number of farms in the region between 2001 and 2006 and the average farm size declined from 454 acres in 2001 to 376 acres in 2006.

**Table 5.2: Total Land Area, Workable[a] and Non-workable[b], Reported by Farms in the Study Area, Northern Ontario, and Ontario, 1996-2006 (acres)**

| | 1996 | | | 2001 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total farms | Total acres | Average farm size | Total farms | Total acres | Average farm size | Total farms | Total acres | Average farm size |
| Ontario | 67,520 | 13,879,565 | 206 | 59,728 | 13,507,357 | 226 | 57,211 | 13,310,216 | 233 |
| Northern Ontario | 2,915 | 1,025,190 | 352 | 2,635 | 1,012,026 | 384 | 2,479 | 1,022,060 | 412 |
| Study Area | 739 | 298,494 | 404 | 669 | 289,460 | 433 | 642 | 292,359 | 455 |
| Algoma District | 365 | 95,482 | 262 | 337 | 94,124 | 279 | 335 | 95,814 | 286 |
| Manitoulin District | 316 | 179,617 | 568 | 284 | 173,523 | 611 | 258 | 178,144 | 690 |
| Sables-Spanish Rivers | 58 | 23,395 | 403 | 48 | 21,813 | 454 | 49 | 18,401 | 376 |

[a] Workable land includes all arable or cleared lands including area in hay, crops, summerfallow, and tame or seeded pasture land.
[b] Non-workable land includes woodlots (sugarbushes, tree windbreaks, and bush that is not used for grazing), natural pastureland, wetlands, ponds, bogs, sloughs, etc., barnyards, lanes, etc., and land on which farm buildings are located.
Source: Statistics Canada, 1996, 2001, 2006.

Approximately 37% or 107,735 acres of the total farmland area reported by farmers in the Study Area is leased or rented (Table 5.3). This is much higher than the provincial average of 28% and the northern Ontario average of 26%. Between 1996 and 2006 the total area of farmland reported as rented in the Study Area increased by 20,313 acres or 23%.

Within the Study Area, Sables-Spanish Rivers reported the lowest percentage of rented farmland at 16% while Manitoulin District reported the highest percentage at 44%.

**Table 5.3: Land Tenure in the Study Area, Northern Ontario and Ontario, 1996-2006 (acres)**

| | 1996 | | | | 2006 | | | |
|---|---|---|---|---|---|---|---|---|
| | Area owned | | Area rented/leased | | Area owned | | Area rented/leased | |
| | Acres | % | Acres | % | Acres | % | Acres | % |
| Ontario | 9,764,607 | 70% | 4,114,958 | 30% | 9,613,544 | 72% | 3,696,672 | 28% |
| Northern Ontario | 808,816 | 79% | 216,374 | 21% | 755,642 | 74% | 266,418 | 26% |
| Study Area | 211,072 | 71% | 87,422 | 29% | 184,624 | 63% | 107,735 | 37% |
| Algoma District | 74,411 | 78% | 21,071 | 22% | 69,515 | 73% | 26,299 | 27% |
| Manitoulin District | 117,864 | 66% | 61,753 | 34% | 99,637 | 56% | 78,507 | 44% |
| Sables-Spanish Rivers | 18,797 | 80% | 4,598 | 20% | 15,472 | 84% | 2,929 | 16% |

Source: Statistics Canada, 1996, 2006.

## 5.3 Farmland Use

The largest single use of farmland in the Study Area is natural land for pasture. In 2006, 98,924 acres or 34% of the total farmland base was reported as natural land for pasture (Table 5.4). The Study Area reported 78,236 acres of land in crops in 2006 which represents about 27% of the total farmland base. The Study Area has a lower percentage of its farmland base in crop production compared to northern Ontario as a whole (37%) and the province (68%). Historically, the Study Area reported a larger area of farmland in crop production. For example, in 1981 the Study Area reported 81,365 acres of farmland in crop production (38,494 acres in Algoma District, 37,362 acres in Manitoulin District, and 5,509 acres in Sables-Spanish Rivers).

Between 1996 and 2006, the area reported in crop production in the Study Area increased by 6,168 acres or about 9%. The majority of this increase occurred in Algoma District where the area in crop production increased by 5,655 acres. During the same period the area reported in crop production in northern Ontario and Ontario increased by 8% and 3% respectively.

**Table 5.4: Farmland Use in the Study Area, Northern Ontario and Ontario, 1996-2006 (acres)**

| | Total area of farms (acres) | Land in crops | Summer-fallow [a] | Tame or seeded pasture [b] | Natural land for pasture [c] | All other land [d] |
|---|---|---|---|---|---|---|
| **1996** | | | | | | |
| Ontario | 13,879,565 | 8,759,707 | 48,492 | 860,786 | 1,641,692 | 2,568,888 |
| Northern Ontario | 1,025,190 | 350,511 | 3,920 | 90,526 | 251,066 | 329,167 |
| Study Area | 298,494 | 72,068 | 283 | 25,882 | 106,574 | 93,687 |
| Algoma District | 95,482 | 32,637 | 135 | 10,132 | 14,468 | 38,110 |
| Manitoulin District | 179,617 | 34,388 | 114 | 13,600 | 87,551 | 43,964 |
| Sables-Spanish Rivers | 23,395 | 5,043 | 34 | 2,150 | 4,555 | 11,613 |
| **2006** | | | | | | |
| Ontario | 13,310,216 | 9,046,383 | 29,394 | 749,719 | 1,112,668 | 2,372,052 |
| Northern Ontario | 1,022,060 | 380,186 | 2,163 | 96,093 | 222,173 | 321,445 |
| Study Area | 292,359 | 78,236 | 141 | 28,019 | 98,924 | 87,039 |
| Algoma District | 95,814 | 38,292 | 141 | 11,090 | 11,067 | 35,224 |
| Manitoulin District | 178,144 | 34,279 | 0 | 15,243 | 84,592 | 44,030 |
| Sables-Spanish Rivers | 18,401 | 5,665 | 0 | 1,686 | 3,265 | 7,785 |

[a] Summerfallow involves keeping normally cultivated land free of vegetation throughout one growing season by cultivating (plowing, discing, etc.) and/or applying chemicals to destroy weeds, insects and soil-borne diseases and allow a buildup of soil moisture reserves for the next crop year.
[b] Tame or seeded pasture includes grazeable land that has been improved from its natural state by seeding, draining, irrigating, fertilizing or weed control. Does not include areas of land harvested for hay, silage, or seed.
[c] Natural land for pasture includes areas used for pasture that have not been cultivated and seeded, or drained, irrigated or fertilized. Includes native pasture/hay (indigenous grass suitable as feed for livestock and game); rangeland (land with natural plant cover, principally native grasses or shrubs valuable for forage); grazeable bush, etc.
[d] All other land includes woodland, wetlands and Christmas tree area.
N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

## 5.4 Farm Types

The Study Area features a variety of different farm types based on farms reporting gross farm receipts of $2,500 or more. In 2006, a total of 252 farms or 39% of all farms in the region were primarily engaged in beef cattle production while 23 farms or 4% of all farms in the region were primarily engaged in dairy production and 89 farms or 14% of all farms were primarily engaged in 'other animal' production (e.g. horses, bison, deer, elk, llamas, etc.). A further 207 farms (32%) were primarily engaged in hay/fodder production and 29 farms (5%) were involved in greenhouse, nursery or floriculture production in 2006 (Table 5.5).

Between 2001 and 2006, the number of beef cattle farms in the Study Area reporting gross farm receipts of $2,500 or more declined from 308 farms to 252 farms or 18%. During the same period northern Ontario experienced a 19% decline in beef cattle farms while the province as a whole experienced a 13% decline in beef cattle farms.

The number of dairy farms in the Study Area reporting gross farm receipts of $2,500 or more declined from 31 farms in 2001 to 23 farms in 2006 which represents a decrease of 26%. During the same period northern Ontario experienced a 28% decline in dairy farms while the province as a whole experienced a 23% decline in dairy farms.

Other significant changes in farm numbers in the Study Area between 2001 and 2006 include an increase in hay/fodder farms (+75 farms reporting gross farm receipts of $2,500 or more), other animal production farms (+36 farms), greenhouse, nursery or floriculture operations (+10 farms), vegetable production (+6 farms), and fruit production (+4 farms).

**Table 5.5: Number of Farms by Farm Type for the Study Area, Northern Ontario and Ontario, 2001 and 2006 (Farms reporting gross farm receipts of $2,500 or more) [a]**

| | Total farms | Dairy cattle | Beef cattle | Hog and pig | Poultry and egg [b] | Sheep and goat | Other animal production [c] | Oilseed and grain | Fruit | Green-house, nursery, floriculture | Other crops [d] | Vegetable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2001** | | | | | | | | | | | | |
| Ontario | 55,092 | 6,414 | 12,738 | 2,491 | 1,614 | 1,017 | 5,428 | 13,371 | 1,739 | 2,430 | 6,434 | 1,416 |
| Northern Ontario Region | 2,279 | 239 | 928 | 16 | 16 | 36 | 241 | 75 | 23 | 125 | 545 | 35 |
| Study Area | 578 | 31 | 308 | 2 | 6 | 7 | 53 | 6 | 5 | 19 | 132 | 9 |
| Algoma District | 277 | 18 | 113 | 2 | 4 | 4 | 30 | 3 | 5 | 15 | 76 | 7 |
| Manitoulin District | 257 | 10 | 175 | 0 | 1 | 3 | 17 | 3 | 0 | 3 | 44 | 1 |
| Sables-Spanish Rivers | 44 | 3 | 20 | 0 | 1 | 0 | 6 | 0 | 0 | 1 | 12 | 1 |
| **2006** | | | | | | | | | | | | |
| Ontario | 57,211 | 4,937 | 11,052 | 2,222 | 1,700 | 1,365 | 7,573 | 13,056 | 1,892 | 2,822 | 8,823 | 1,769 |
| Northern Ontario Region | 2,479 | 171 | 752 | 11 | 27 | 46 | 383 | 59 | 35 | 131 | 810 | 54 |
| Study Area | 642 | 23 | 252 | 1 | 6 | 8 | 89 | 3 | 9 | 29 | 207 | 15 |
| Algoma District | 335 | 12 | 85 | 1 | 4 | 4 | 69 | 2 | 7 | 22 | 119 | 10 |
| Manitoulin District | 258 | 8 | 152 | 0 | 2 | 4 | 17 | 1 | 1 | 5 | 64 | 4 |
| Sables-Spanish Rivers | 49 | 3 | 15 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 24 | 1 |

[a] Farm typing is a procedure that classifies each census farm according to the predominant type of production. This is done by estimating the potential receipts from the inventories of crops and livestock reported on the questionnaire and determining the product or group of products that make up the majority of the estimated receipts. For example, a census farm with total potential receipts of 60% from hogs, 20% from beef cattle and 20% from wheat, would be classified as a hog farm.
[b] Includes ostriches and emus.
[c] Includes horses, bison, deer, elk, llamas, alpacas, wild boars, rabbits, bees, etc.
[d] Includes hay, fodder and other field crops excluding vegetables and fruit.
Source: Statistics Canada, 2001, 2006.

In 2001, the first year that the Census of Agriculture began to collect data on organic farming activity, there were a total of 3 farms in the Study Area that reported organic farming activity.[17] By 2006 a total of 63 farms in the Study Area reported that they produced organic products of which 2 farms reported that they produced products that were certified as organic.[18] Additional details on organic production in the Study Area are provided in Table 5.6.

**Table 5.6: Number of Farms Producing Organic Products in the Study Area, Northern Ontario and Ontario, 2006**

| | Total number of farms reporting organic products regardless of the certification status | Number of farms producing certified organic products | Number of farms producing transitional organic products | Number of farms producing not certified organic products | Total farms reporting organic hay or field crops | Total farms reporting organic fruits, vegetables or greenhouse products | Total farms reporting organic animals or animal products | Total farms reporting organic maple products | Total farms reporting other organic products |
|---|---|---|---|---|---|---|---|---|---|
| Ontario | 3,591 | 593 | 148 | 2,989 | 1,873 | 934 | 1,748 | 262 | 364 |
| Northern Ontario Region | 240 | 12 | 3 | 227 | 110 | 57 | 144 | 22 | 22 |
| Study Area | 63 | 2 | 0 | 61 | 27 | 14 | 39 | 16 | 4 |
| Algoma District | 40 | 2 | 0 | 38 | 16 | 8 | 24 | 10 | 1 |
| Manitoulin District | 17 | 0 | 0 | 17 | 7 | 6 | 12 | 5 | 3 |
| Sables-Spanish Rivers | 6 | 0 | 0 | 6 | 4 | 0 | 3 | 1 | 0 |

Source: Statistics Canada, 2006.

[17] All three of the farms were located in Algoma District.

[18] Canada recently adopted a national code of practice that defines and regulates the use of the terms "organic", "organically grown", "organically raised", "certified organic" and other variations. Independent, organic certification agencies verify growing, processing, packaging, transportation, warehousing and retailing procedures. While these standards are not regulated by any government department, the Food and Drug Act requires labels to be true and factual.

A further assessment of farm type specialization in the Study Area can be obtained using the Location Quotient. Economic analysts have found the Location Quotient (LQ) to be a useful tool in determining which sectors of the economy are more specialized than others (Bendavid-Val, 1991, p.73). The term 'specialized' in this instance refers to the relative size or presence of an industrial activity. The LQ is essentially a ratio of ratios. In assessing farm type specialization, the regional share of a particular farm sector or type is compared to the provincial share in the sector. The LQ can be used to gauge the relative specialization of a region in various farm sectors such as dairy, beef and field crops. Using the study area beef sector as an example, the LQ formula for 2006 appears as follows:

$$LQ = \frac{\text{number of beef farms in the region}}{\text{total number of farms in the region}} \div \frac{\text{number of beef farms in the province}}{\text{total number of farms in the province}}$$

$$LQ = (252 / 642) \div (11{,}052 / 57{,}211) = 2.0$$

For the purpose of interpreting the LQ, it has a base value of one. An LQ of one suggests that the region and the province are specialized to an equal degree in the chosen industry sector. If the LQ is greater than one, it indicates that the region has a higher degree of specialization in the industry sector than the province. An LQ of less than one indicates that the industry sector is less specialized in the region than it is for the province.

Using the farm type data from Table 5.5, the 2006 LQ for the beef sector (2.0) indicates that the Study Area as a whole continues to be specialized in beef production although not as specialized as it was in 2001 (2.3). The Study Area also continues to be specialized in hay/fodder crop production (2.1).

Within the Study Area in 2006, Algoma District was specialized in beef production (1.3), 'other animal' production (1.6), greenhouse/nursery/floriculture production (1.3), and hay/fodder production (2.3). In 2006, Manitoulin District was specialized in beef production (3.0) and hay/fodder production (1.6). In 2006, Sables-Spanish Rivers was specialized in beef production (1.6) and hay/fodder production (3.2). Additional LQ details are presented in Table 5.7.

**Table 5.7: Location Quotient for Farm Types for the Study Area, 2001 and 2006**

| Year | Dairy cattle | Beef cattle | Hog and pig | Poultry and egg [a] | Sheep and goat | Other animal prod. [b] | Oilseed and grain | Fruit | Green-house, nursery, floriculture | Other crops [c] | Vegetable |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Study Area | | | | | | | | | | | |
| 2001 | 0.5 | 2.3 | 0.1 | 0.4 | 0.7 | 0.9 | 0.0 | 0.3 | 0.7 | 2.0 | 0.6 |
| 2006 | 0.4 | 2.0 | 0.0 | 0.3 | 0.5 | 1.0 | 0.0 | 0.4 | 0.9 | 2.1 | 0.8 |
| Algoma District | | | | | | | | | | | |
| 2001 | 0.6 | 1.8 | 0.2 | 0.5 | 0.8 | 1.1 | 0.0 | 0.6 | 1.2 | 2.3 | 1.0 |
| 2006 | 0.4 | 1.3 | 0.1 | 0.4 | 0.5 | 1.6 | 0.0 | 0.6 | 1.3 | 2.3 | 1.0 |
| Manitoulin District | | | | | | | | | | | |
| 2001 | 0.3 | 2.9 | 0.0 | 0.1 | 0.6 | 0.7 | 0.0 | 0.0 | 0.3 | 1.5 | 0.2 |
| 2006 | 0.4 | 3.0 | 0.0 | 0.3 | 0.6 | 0.5 | 0.0 | 0.1 | 0.4 | 1.6 | 0.5 |
| Sables-Spanish Rivers | | | | | | | | | | | |
| 2001 | 0.6 | 2.0 | 0.0 | 0.8 | 0.0 | 1.4 | 0.0 | 0.0 | 0.5 | 2.3 | 0.9 |
| 2006 | 0.7 | 1.6 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.6 | 0.8 | 3.2 | 0.7 |

[a] Includes ostriches and emus.
[b] Includes horses, bison, deer, elk, llamas, alpacas, wild boars, rabbits, bees, etc.
[c] Includes hay, fodder and other field crops excluding vegetables and fruit.
Source: Adapted from Statistics Canada, 2001, 2006.

## 5.5 Livestock and Animals

Study Area farms raise a number of different types of livestock and poultry (Table 5.8a and 5.8b).[19]

In 1996, the Study Area reported a total of 12,753 beef cows which dropped by 5% to 12,114 beef cows in 2006. The majority of the beef cows were reported in Manitoulin District (63%) in 2006.

In 1996, the Study Area reported a total of 2,833 dairy cows which dropped by 44% to 1,590 dairy cows in 2006. The majority of the dairy cows were reported in Algoma District (55%) in 2006.

[19] A farm may be involved in producing more than one type of livestock which explains, for example, why there are more beef farms reported here than in section 4.4 of the report which focuses on farm types by the predominant type of production on each farm.

Between 1996 and 2006, there was a significant drop off in the number of hens and chickens in the Study Area. In Algoma District for example the number of hens and chickens declined from 107,700 to 29,540 or 73%.

In 1996, the Study Area reported a total of 753 horses and ponies which increased by 49% to 1,125 horses and ponies in 2006. The majority of the horses and ponies were reported in Algoma District (73%) in 2006.[20]

Between 1996 and 2006, the number of sheep and lambs grew in some areas of the Study Area. In Algoma District the number of sheep and lambs increased from 1,364 to 2,424 or 78%. Additionally, the number of goats in Algoma District increased from 90 to 215 or almost 140%.

[20] The economic importance of livestock such as sheep, goats, horses, etc. to the local and regional economy is often overlooked. However, the impacts of these sectors can be substantial. A 2006 study on the equine sector in northeastern Ontario determined that the sector directly contributes $70 million to the regional economy. This is equivalent to the economic impact of Nipissing University on the North Bay/Nipissing region. Furthermore, if the indirect and induced economic impact is added, the contribution is $105 million annually. The figures are based on an estimated 14,000 horses in northeastern Ontario – including recreational and show hoses, racing horses, and other horses including draft horses (Suthey Holler Associates. May 2006).

**Table 5.8a: Inventory of Selected Farm Related Animals for the Study Area, Northern Ontario and Ontario, 1996 and 2006**

| | Hens and chickens | | Dairy cows | | Beef cows | | Pigs | | Sheep and lambs | | Goats | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # birds | # farms | # cows | # farms | # cows | # farms | # pigs | # farms | # sheep | # farms | # goats |
| **1996** | | | | | | | | | | | | |
| Ontario | 8,295 | 35,596,946 | 10,122 | 404,797 | 19,572 | 441,211 | 6,777 | 2,831,082 | 3,592 | 231,087 | 2,521 | 45,258 |
| Northern Ontario Region | 451 | 283,388 | 437 | 18,259 | 1,448 | 37,720 | 144 | 7,606 | 189 | 10,435 | 124 | 1,462 |
| Study Area | 111 | NA | 86 | 2,833 | 428 | 12,753 | 29 | NA | 68 | NA | 27 | NA |
| Algoma District | 70 | 107,700 | 38 | 1,442 | 178 | 4,072 | 16 | 781 | 32 | 1,364 | 16 | 90 |
| Manitoulin District | 33 | 1,168 | 43 | 1,161 | 216 | 7,927 | 12 | 334 | 32 | 1,099 | 9 | 96 |
| Sables-Spanish Rivers | 8 | NA | 5 | 230 | 34 | 754 | 1 | NA | 4 | NA | 2 | NA |
| **2006** | | | | | | | | | | | | |
| Ontario | 7,397 | 44,101,552 | 6,092 | 329,737 | 15,017 | 377,354 | 4,070 | 3,950,592 | 3,408 | 311,162 | 2,169 | 76,114 |
| Northern Ontario Region | 342 | 79,252 | 209 | 11,922 | 1,187 | 39,723 | 85 | 10,171 | 166 | 13,899 | 112 | 3,265 |
| Study Area | 94 | 31,698 | 40 | 1,590 | 357 | 12,114 | 18 | NA | 53 | NA | 30 | NA |
| Algoma District | 58 | 29,540 | 24 | 869 | 152 | 3,983 | 13 | NA | 30 | 2,424 | 16 | 215 |
| Manitoulin District | 28 | 1,425 | 9 | 511 | 174 | 7,627 | 5 | NA | 21 | 971 | 13 | 52 |
| Sables-Spanish Rivers | 8 | 733 | 7 | 210 | 31 | 504 | 0 | 0 | 2 | NA | 1 | NA |

NA denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

**Table 5.8b: Inventory of Selected Farm Related Animals for the Study Area, Northern Ontario and Ontario, 1996 and 2006**

| | Horses and ponies | | Bison | | Deer and elk (excluding wild deer/elk) | | Llamas and alpacas | | Colonies of bees | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # horses | # farms | # bison | # farms | # deer | # farms | # llama | # farms | # colonies |
| **1996** | | | | | | | | | | |
| Ontario | 11,829 | 76,553 | 46 | 2,344 | 256 | 15,735 | 161 | 1,114 | 1,263 | 62,928 |
| Northern Ontario Region | 640 | 3,555 | 14 | 892 | 16 | 722 | 13 | 138 | 85 | 1,796 |
| Study Area | 152 | 753 | 4 | NA | 2 | NA | 2 | NA | 14 | NA |
| Algoma District | 80 | 433 | 3 | NA | 1 | NA | 2 | NA | 7 | 17 |
| Manitoulin District | 58 | 265 | 0 | 0 | 1 | NA | 0 | 0 | 5 | 79 |
| Sables-Spanish Rivers | 14 | 55 | 1 | NA | 0 | 0 | 0 | 0 | 2 | NA |
| **2006** | | | | | | | | | | |
| Ontario | 12,333 | 97,285 | 71 | 4,106 | 238 | 11,581 | 696 | 4,332 | 981 | 64,591 |
| Northern Ontario Region | 630 | 4,507 | 17 | 2,316 | 24 | 2,179 | 32 | 250 | 62 | 752 |
| Study Area | 153 | 1,125 | 1 | NA | 2 | NA | 8 | NA | 15 | 121 |
| Algoma District | 96 | 824 | 1 | NA | 1 | NA | 6 | 110 | 12 | 77 |
| Manitoulin District | 42 | 225 | 0 | 0 | 1 | NA | 2 | NA | 3 | 44 |
| Sables-Spanish Rivers | 15 | 76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

NA denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

## 5.6 Field Crops

Study Area farms produce a variety of field crops including wheat, barley, oats, corn, soybeans, canola, potatoes and hay crops (Table 5.9a and 5.9b).

In 2006, the Study Area reported 2,436 acres of oats, up from 1,502 acres in 1996. The majority of the oat production (1,341 acres) was reported in Algoma District in 2006.

In 2006, the Study Area reported 3,629 acres of barley, up from 3,125 acres in 1996. The majority of the barley production (2,113 acres) was reported in Manitoulin District in 2006.

With respect to wheat production, the acreage data is incomplete but the number of farms producing wheat in the Study Area increased from 10 to 22 between 1996 and 2006.

With respect to corn production, the acreage data is incomplete but the number of farms producing corn for grain in the Study Area increased from 5 to 8 while the number of farms producing corn for silage increased from 25 to 37 between 1996 and 2006.

In 2006, the Study Area reported 18,658 acres of alfalfa, up from 12,792 acres in 1996. The majority of alfalfa production (12,297 acres) was reported in Manitoulin District in 2006. In 2006, the Study Area also reported 47,125 acres of other hay crops, down from 49,795 acres in 1996. The majority of other hay crop production (26,767 acres) was reported in Algoma District in 2006.

In 2006, the Study Area reported a limited amount of canola and soybeans from a small number of farms (e.g. 3 to 5).

With respect to potato production, the acreage data is incomplete but the number of farms producing potatoes in the Study Area declined from 29 to 22 between 1996 and 2006.

**Table 5.9a: Total Reported Acreage of Selected Field Crops for the Study Area, Northern Ontario and Ontario, 1996 and 2006**

| | Wheat | | Oats | | Barley | | Mixed grains | | Corn for Grain | | Corn for Silage | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres |
| **1996** | | | | | | | | | | | | |
| Ontario | 15,282 | 778,952 | 4,740 | 98,357 | 8,456 | 332,821 | 8,651 | 279,762 | 20,823 | 1,895,650 | 9,927 | 296,029 |
| Northern Ontario Region | 70 | 5,416 | 528 | 15,102 | 463 | 35,733 | 287 | 13,013 | 24 | 596 | 47 | 1,665 |
| Study Area | 10 | NA | 92 | 1,502 | 79 | 3,125 | 85 | NA | 5 | NA | 25 | NA |
| Algoma District | 9 | 368 | 49 | 860 | 22 | 1,028 | 42 | 1,363 | 3 | NA | 5 | 150 |
| Manitoulin District | 1 | NA | 34 | 476 | 52 | 1,710 | 39 | 1,192 | 2 | NA | 19 | 683 |
| Sables-Spanish Rivers | 0 | 0 | 9 | 166 | 5 | 387 | 4 | NA | 0 | 0 | 1 | NA |
| **2006** | | | | | | | | | | | | |
| Ontario | 14,682 | 1,235,390 | 4,362 | 131,952 | 5,139 | 221,029 | 5,400 | 173,454 | 14,304 | 1,577,862 | 8,404 | 320,759 |
| Northern Ontario Region | 142 | 21,264 | 455 | 19,839 | 334 | 25,329 | 181 | 6,768 | 23 | 1,911 | 113 | 4,021 |
| Study Area | 22 | NA | 104 | 2,436 | 91 | 3,629 | 72 | 2,418 | 8 | NA | 37 | NA |
| Algoma District | 9 | 248 | 61 | 1,341 | 27 | 1,008 | 31 | 1,086 | 6 | 51 | 19 | 383 |
| Manitoulin District | 9 | 207 | 29 | 847 | 54 | 2,113 | 38 | 1,290 | 2 | NA | 13 | NA |
| Sables-Spanish Rivers | 4 | NA | 14 | 248 | 10 | 508 | 3 | 42 | 0 | 0 | 5 | 152 |

N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

**Table 5.9b: Total Reported Acreage of Selected Field Crops for the Study Area, Northern Ontario and Ontario, 1996 and 2006**

| | Alfalfa/Alfalfa Mixtures | | Other Tame Hay/Fodder Crops | | Forage Seed for Seed | | Canola | | Soybeans | | Potatoes | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres |
| **1996** | | | | | | | | | | | | |
| Ontario | 26,521 | 1,479,447 | 18,172 | 1,036,399 | 264 | 11,910 | 757 | 53,304 | 18,743 | 1,918,055 | 1,218 | 39,905 |
| Northern Ontario Region | 749 | 66,908 | 1,769 | 195,393 | 55 | 3,531 | 63 | 5,351 | 5 | 94 | 143 | 2,065 |
| Study Area | 171 | 12,792 | 472 | 49,795 | 3 | NA | 3 | NA | 1 | NA | 29 | NA |
| Algoma District | 42 | 2,680 | 233 | 25,440 | 2 | NA | 2 | NA | 0 | 0 | 21 | 330 |
| Manitoulin District | 122 | 9,726 | 204 | 20,383 | 1 | NA | 1 | NA | 1 | NA | 7 | 9 |
| Sables-Spanish Rivers | 7 | 386 | 35 | 3,972 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | NA |
| **2006** | | | | | | | | | | | | |
| Ontario | 24,427 | 1,662,370 | 13,010 | 900,267 | 312 | 12,323 | 205 | 18,575 | 17,171 | 2,155,884 | 904 | 38,155 |
| Northern Ontario Region | 836 | 103,232 | 1,383 | 175,975 | 25 | 1,745 | 33 | 4,578 | 35 | 4,385 | 85 | 1,476 |
| Study Area | 197 | 18,658 | 376 | 47,125 | 5 | NA | 3 | NA | 3 | NA | 22 | NA |
| Algoma District | 60 | 5,268 | 200 | 26,767 | 3 | 640 | 3 | NA | 2 | NA | 13 | NA |
| Manitoulin District | 123 | 12,297 | 142 | 16,908 | 1 | NA | 0 | 0 | 0 | 0 | 6 | 46 |
| Sables-Spanish Rivers | 14 | 1,093 | 34 | 3,450 | 1 | NA | 0 | 0 | 1 | NA | 3 | 5 |

N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

## 5.7 Fruit, Berry and Vegetable Production

A small number of farms in the Study Area produce fruit and vegetables. In 2006, a total of 7 farms were involved in apple production while 2 farms were involved in pear production. In 2006, a total of 20 farms were involved in strawberry production while 13 farms were involved in raspberry production and 1 farm was involved in blueberry production. In general, it appears that the number of farms engaged in fruit production is down from 1996 while the number of farms engaged in berry production is up from 1996 (Table 5.10).

**Table 5.10: Number of Farms and Acreage of Selected Fruit and Berry Production, 1996-2006**

| | Apples | | Pears | | Plums and Prunes | | Strawberries | | Raspberries | | Blueberries | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres |
| **1996** | | | | | | | | | | | | |
| Ontario | 2,482 | 30,524 | 1,356 | 3,305 | 1,065 | 1,622 | 971 | 5,507 | 789 | 1,250 | 172 | 639 |
| Northern Ontario Region | 33 | 50 | 6 | NA | 9 | 4 | 51 | 309 | 50 | 76 | 9 | 139 |
| Study Area | 9 | NA | 2 | NA | 1 | NA | 11 | NA | 11 | NA | 1 | NA |
| Algoma District | 6 | NA | 2 | NA | 1 | NA | 10 | 24 | 9 | NA | 1 | NA |
| Manitoulin District | 1 | NA | 0 | NA | 0 | NA | 0 | 0 | 1 | NA | 0 | 0 |
| Sables-Spanish Rivers | 2 | NA | 0 | NA | 0 | NA | 1 | NA | 1 | NA | 0 | 0 |
| **2006** | | | | | | | | | | | | |
| Ontario | 1,223 | 20,169 | 542 | 2,546 | 376 | 1,231 | 801 | 4,243 | 613 | 1,153 | 161 | 732 |
| Northern Ontario Region | 17 | 56 | 5 | 1 | 2 | NA | 43 | 223 | 31 | 52 | 5 | 59 |
| Study Area | 7 | NA | 2 | NA | 0 | 0 | 20 | NA | 13 | NA | 1 | NA |
| Algoma District | 2 | NA | 0 | 0 | 0 | 0 | 15 | 38 | 8 | 6 | 1 | NA |
| Manitoulin District | 5 | 40 | 2 | NA | 0 | 0 | 4 | 1 | 5 | NA | 0 | 0 |
| Sables-Spanish Rivers | 0 | 0 | 0 | 0 | 0 | 0 | 1 | NA | 0 | 0 | 0 | 0 |

N/A denotes that too few farms have reported data to ensure confidentiality. Data at the individual municipality / township level is not reported on due to the limited number of farms and missing acreage data.
Source: Statistics Canada, 1996, 2006.

Although Study Area farms produce a large variety of vegetables it appears that the number of farms involved in vegetable production has generally declined over the 1996 to 2006 period. For example, the number of farms producing tomatoes declined from 31 to 23 while the number of farms producing carrots declined from 26 to 14 and the number of farms producing cucumbers declined from 33 to 22. Additionally, there was a small decline in the number of farms producing cabbage, cauliflower, and broccoli.

Sweet corn production also declined in overall acreage even though the number of farms producing sweet corn in the Study Area increased from 38 to 46 between 1996 and 2006.

The number of farms producing pumpkins and squash also increased from 18 to 24 between 1996 and 2006. Additional details are provided in Table 5.11a and 5.11b.

**Table 5.11a: Number of Farms and Acreage of Selected Vegetable Production, 1996-2006**

| | Sweet corn | | Tomatoes | | Cucumbers | | Green Peas | | Green Beans | | Cabbage | | Cauliflower | | Broccoli | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres |
| **1996** | | | | | | | | | | | | | | | | |
| Ontario | 2,081 | 52,789 | 1,822 | 21,854 | 1,170 | 3,818 | 20,634 | 8,350 | 947 | 9,729 | 636 | 4,131 | 517 | 2,964 | 512 | 2,739 |
| Northern Ontario Region | 113 | 392 | 89 | 82 | 98 | 67 | 29 | 12 | 96 | 36 | 50 | 25 | 45 | 17 | 40 | 12 |
| Study Area | 38 | 127 | 31 | NA | 33 | NA | 27 | NA | 29 | NA | 12 | 3 | 11 | NA | 9 | 1 |
| Algoma District | 24 | 111 | 17 | 3 | 20 | 9 | 17 | 5 | 17 | 6 | 12 | 3 | 10 | 1 | 9 | 1 |
| Manitoulin District | 10 | 14 | 11 | 7 | 9 | 2 | 7 | 2 | 8 | NA | 0 | 0 | 0 | 0 | 0 | 0 |
| Sables-Spanish Rivers | 4 | 2 | 3 | NA | 4 | NA | 3 | NA | 4 | 1 | 0 | 0 | 1 | NA | 0 | 0 |
| **2006** | | | | | | | | | | | | | | | | |
| Ontario | 1,399 | 38,617 | 1,429 | 20,195 | 964 | 4,146 | 763 | 21,482 | 852 | 11,879 | 442 | 3,707 | 327 | 2,025 | 346 | 3,712 |
| Northern Ontario Region | 92 | 181 | 61 | 15 | 61 | 23 | 54 | 21 | 61 | 29 | 32 | 28 | 23 | 6 | 22 | 4 |
| Study Area | 46 | 61 | 23 | NA | 22 | NA | 22 | NA | 22 | NA | 11 | NA | 7 | NA | 6 | NA |
| Algoma District | 29 | 44 | 14 | 4 | 15 | 5 | 15 | 5 | 14 | 3 | 9 | 2 | 4 | 1 | 4 | 1 |
| Manitoulin District | 12 | 13 | 8 | 3 | 6 | 2 | 6 | 1 | 7 | NA | 2 | NA | 2 | NA | 2 | NA |
| Sables-Spanish Rivers | 5 | 4 | 1 | NA | 1 | NA | 1 | NA | 1 | NA | 0 | 0 | 1 | NA | 0 | 0 |

N/A denotes that too few farms have reported data to ensure confidentiality. Data at the individual municipality / township level is not reported on due to the limited number of farms and missing acreage data.
Source: Statistics Canada, 1996, 2006.

**Table 5.11b: Number of Farms and Acreage of Selected Vegetable Production, 1996-2006**

| | Carrots | | Rutabagas | | Beets | | Dry Onions | | Lettuce | | Peppers | | Pumpkins, Squash | | Asparagus | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres | # farms | # acres |
| **1996** | | | | | | | | | | | | | | | | |
| Ontario | 820 | 7,953 | 260 | 2,919 | 718 | 797 | 724 | 6,047 | 475 | 1,377 | 880 | 3,632 | 1,429 | 5,664 | 338 | 1,986 |
| Northern Ontario Region | 96 | 35 | 52 | 23 | 84 | 23 | 49 | 13 | 39 | 10 | 29 | 9 | 70 | 41 | 10 | 5 |
| Study Area | 26 | NA | 13 | NA | 25 | NA | 15 | NA | 9 | NA | 7 | NA | 18 | NA | 3 | NA |
| Algoma District | 18 | 5 | 9 | 1 | 19 | 5 | 10 | 1 | 7 | 1 | 5 | 2 | 13 | 6 | 2 | NA |
| Manitoulin District | 6 | NA | 3 | NA | 4 | NA | 2 | NA | 1 | NA | 2 | NA | 5 | NA | 1 | NA |
| Sables-Spanish Rivers | 2 | NA | 1 | NA | 2 | NA | 3 | NA | 1 | NA | 0 | 0 | 0 | 0 | 0 | 0 |
| **2006** | | | | | | | | | | | | | | | | |
| Ontario | 648 | 9,993 | 204 | 1,814 | 607 | 1,088 | 648 | 6,930 | 429 | 955 | 795 | 4,015 | 1,518 | 9,297 | 391 | 3,245 |
| Northern Ontario Region | 56 | 21 | 25 | 20 | 52 | 16 | 28 | 4 | 35 | 6 | 21 | 2 | 69 | 74 | 11 | 2 |
| Study Area | 14 | 4 | 9 | NA | 13 | NA | 13 | NA | 13 | NA | 6 | NA | 24 | 11 | 3 | NA |
| Algoma District | 10 | 3 | 7 | 2 | 8 | 2 | 12 | 2 | 7 | 1 | 4 | 1 | 16 | 8 | 1 | NA |
| Manitoulin District | 4 | 1 | 1 | NA | 4 | 1 | 1 | NA | 5 | 1 | 2 | NA | 8 | 3 | 1 | NA |
| Sables-Spanish Rivers | 0 | 0 | 1 | NA | 1 | NA | 0 | 0 | 1 | NA | 0 | 0 | 0 | 0 | 1 | NA |

N/A denotes that too few farms have reported data to ensure confidentiality. Data at the individual municipality / township level is not reported on due to the limited number of farms and missing acreage data.
Source: Statistics Canada, 1996, 2006.

## 5.8 Greenhouse Production

Between 1996 and 2006, the number of farms involved in greenhouse production in the Study Area increased from 22 to 25 while the overall area under glass, plastic or other protection in use declined from 526,166 square feet to over 401,684 square feet (Table 5.12). Due to the small number of farms engaged in this activity in some parts of the Study Area it is not possible to determine the overall area in production for different greenhouse products.

The data indicates that the number of farms involved in greenhouse flower production in the Study Area remained unchanged at 20 between 1996 and 2006 while the number of farms involved in greenhouse vegetable production increased from 8 farms to 13 farms and the number of farms involved in mushroom production increased from 1 farm to 2 farms.

**Table 5.12: Number of Farms and Production Area Associated with Greenhouse Production, 1996-2006**

| | Total area under glass, plastic or other protection | | Total area of greenhouses in use in May | | Greenhouse flowers | | Greenhouse vegetables | | Other greenhouse products | | Mushrooms | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # farms | # square feet | # farms | # square feet | # farms | # square feet | # farms | # square feet | # farms | # square feet | # farms | # square feet |
| **1996** | | | | | | | | | | | | |
| Ontario | 2,085 | 63,302,565 | 2,085 | 62,609,895 | 1,465 | 36,100,406 | 785 | 22,163,817 | 409 | 4,345,672 | 80 | 3,407,376 |
| Northern Ontario Region | 138 | 2,130,535 | 138 | 2,074,054 | 104 | 774,835 | 61 | 92,163 | 31 | 1,207,056 | 1 | NA |
| Study Area | 22 | 534,496 | 22 | 526,166 | 20 | NA | 8 | NA | 5 | NA | 1 | NA |
| Algoma District | 18 | 482,868 | 18 | 474,538 | 16 | NA | 7 | 6,324 | 5 | NA | 1 | NA |
| Manitoulin District | 4 | 51,628 | 4 | 51,628 | 4 | NA | 1 | NA | 0 | 0 | 0 | 0 |
| Sables-Spanish Rivers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **2006** | | | | | | | | | | | | |
| Ontario | 1,898 | 126,589,790 | 1,898 | 125,141,329 | 1,274 | 49,414,104 | 654 | 69,808,871 | 282 | 5,918,354 | 85 | 3,447,739 |
| Northern Ontario Region | 109 | 3,418,948 | 109 | 3,366,943 | 81 | 797,744 | 46 | 190,838 | 27 | 2,378,361 | 4 | NA |
| Study Area | 25 | NA | 25 | NA | 20 | NA | 13 | NA | 4 | NA | 2 | NA |
| Algoma District | 14 | 402,984 | 14 | 401,684 | 11 | 125,784 | 6 | NA | 3 | NA | 0 | 0 |
| Manitoulin District | 9 | 75,120 | 9 | 74,567 | 7 | 70,120 | 5 | NA | 1 | NA | 2 | NA |
| Sables-Spanish Rivers | 2 | NA | 2 | NA | 2 | NA | 2 | NA | 0 | 0 | 0 | 0 |

N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

## 5.9 Nursery Products, Sod, and Forest Related Products

Between 1996 and 2006, the total number of farms in the Study Area involved in nursery production declined from 14 farms to 5 farms (Table 5.13).[21] Between 1996 and 2006 the number of farms involved in sod production in the Study Area remained unchanged at 1 farm.

Between 1996 and 2006 the number of farms involved in maple syrup production in the Study Area increased from 62 to 65 farms and the number of taps on trees in the area increased from 71,152 to 90,801. In 2006, Algoma District accounted for 84% of the total taps on trees in northern Ontario.

Between 1996 and 2006 the number of farms producing Christmas trees in the Study Area dropped from 20 to 14 farms.

**Table 5.13: Number of Farms and Production Area Associated with Nursery Products, Sod, Christmas Trees, and Taps on Trees for Maple Syrup Production, 1996-2006**

| | Nursery products | | Sod Grown for Sale | | Taps on Maple Trees | | Christmas Trees | |
|---|---|---|---|---|---|---|---|---|
| | # farms | # acres | # farms | # acres | # farms | # taps | # farms | # acres |
| **1996** | | | | | | | | |
| Ontario | 1,619 | 26,217 | 144 | 23,538 | 2,240 | 1,127,373 | 1,345 | 27,887 |
| Northern Ontario Region | 67 | 555 | 17 | 1,323 | 91 | 84,537 | 59 | 1,303 |
| Study Area | 14 | NA | 1 | NA | 62 | 71,152 | 20 | NA |
| Algoma District | 11 | 60 | 1 | NA | 44 | 65,846 | 18 | 336 |
| Manitoulin District | 3 | NA | 0 | 0 | 18 | 5,306 | 1 | NA |
| Sables-Spanish Rivers | 0 | 0 | 0 | 0 | 0 | 0 | 1 | NA |
| **2006** | | | | | | | | |
| Ontario | 1,209 | 27,079 | 120 | 32,196 | 2,240 | 1,311,599 | 725 | 15,795 |
| Northern Ontario Region | 36 | 733 | 9 | 1,029 | 100 | 108,464 | 31 | 697 |
| Study Area | 5 | NA | 1 | 0 | 65 | 90,801 | 14 | NA |
| Algoma District | 3 | 37 | 1 | NA | 49 | 87,139 | 12 | 162 |
| Manitoulin District | 1 | NA | 0 | 0 | 13 | 3,370 | 1 | NA |
| Sables-Spanish Rivers | 1 | NA | 0 | 0 | 3 | 292 | 1 | NA |

N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2006.

[21] Nursery production includes establishments primarily engaged in growing nursery products, nursery stock, shrubbery, bulbs, fruit stock, vines, ornamentals, etc., in open fields.

## 5.10 Farm Productivity: Total Farm Receipts, Farm Operating Expenses and Net Revenue

The Study Area reported $34.3 million in total gross farm receipts in 2005 compared to $30.9 million in 1995 (Table 5.14). The total gross farm receipts for the Study Area for 2005 represent about 19% of the total for northern Ontario.

Within the Study Area, Algoma District reported the largest share of total gross farm receipts in 2005 at $20.1 million while Manitoulin District reported $12.1 million and Sables-Spanish Rivers reported $2.1 million.

A considerable portion of the farm receipts in the Study Area (50%+) are linked to the dairy and beef sectors. In Canada, dairy farms operate under a supply management system and they typically generate higher and more stable farm incomes compared to other farm types.[22]

**Table 5.14: Total Gross Farm Receipts (Excluding Sales of Forest Products from Farms) for the Study Area, Northern Ontario and Ontario, 1995-2005**

| | 1995 | | 2000 | | 2005 | |
|---|---|---|---|---|---|---|
| | Total number of farms | Total gross farm receipts | Total number of farms | Total gross farm receipts | Total number of farms | Total gross farm receipts |
| Ontario | 67,520 | $7,778,476,483 | 59,728 | $9,115,454,790 | 57,211 | $10,342,031,229 |
| Northern Ontario Region | 2,915 | $151,786,040 | 2,635 | $162,099,250 | 2,479 | $179,177,281 |
| Study Area | 739 | $30,978,507 | 669 | $31,325,530 | 642 | $34,394,355 |
| Algoma District | 365 | $18,197,839 | 337 | $16,747,188 | 335 | $20,095,138 |
| Manitoulin District | 316 | $10,631,723 | 284 | $12,270,754 | 258 | $12,150,387 |
| Sables-Spanish Rivers | 58 | $2,148,945 | 48 | $2,307,588 | 49 | $2,148,830 |

Source: Statistics Canada, 1996, 2001, 2006.

Average gross farm receipts per farm for 1995 and 2005 are presented in Table 5.15. Total receipts per farm in the Study Area are, on average, lower than other parts of northern Ontario and the provincial average. Farms in the Study Area averaged $43,854 in gross farm gate sales in 2005, compared to $72,278 per farm in northern Ontario and $180,770 per farm in Ontario.

[22] Supply management is a system used by certain agricultural commodity groups to ensure a stable supply of products. The system also promotes stable farm incomes. The producers control the amount of product they produce, and pay a fee (a levy) on all their production to fund the administration and marketing expenses of their provincial commodity boards and national agency. Milk, poultry and egg production all use supply management controls to regulate domestic production (National Farm Products Council, May 2003).

**Table 5.15: Average Gross Farm Receipts per Farm in the Study Area, Northern Ontario and Ontario, 1995-2005**

| | 1995 | | | 2005 | | |
|---|---|---|---|---|---|---|
| | Total number of farms | Total gross farm receipts | Average receipts per farm | Total number of farms | Total gross farm receipts | Average receipts per farm |
| Ontario | 67,520 | $7,778,476,483 | $115,203 | 57,211 | $10,342,031,229 | $180,770 |
| Northern Ontario Region | 2,915 | $151,786,040 | $52,071 | 2,479 | $179,177,281 | $72,278 |
| Study Area | 739 | $30,978,507 | $41,919 | 642 | $34,394,355 | $53,574 |
| Algoma District | 365 | $18,197,839 | $42,130 | 335 | $20,095,138 | $50,881 |
| Manitoulin District | 316 | $10,631,723 | $33,645 | 258 | $12,150,387 | $47,095 |
| Sables-Spanish Rivers | 58 | $2,148,945 | $37,051 | 49 | $2,148,830 | $43,854 |

Source: Statistics Canada, 1996, 2006.

Farm woodlots represent an important source of income for many farmers in northern Ontario. In 2005, farms in the Study Area reported approximately $377,000 in sales of forest products (Table 5.16).

**Table 5.16: Sales of Forest Products from Farms for the Study Area, Northern Ontario and Ontario, 1995-2005**

| | 1995 | | 2000 | | 2005 | |
|---|---|---|---|---|---|---|
| | Total number of farms | Sales of forest products | Total number of farms | Sales of forest products | Total number of farms | Sales of forest products |
| Ontario | 3,343 | $19,717,541 | 2,903 | $20,587,058 | 2,485 | $18,568,858 |
| Northern Ontario Region | 284 | $2,122,968 | 272 | $2,127,631 | 222 | $2,544,585 |
| Study Area | 92 | $625,352 | 82 | $461,241 | 56 | $377,405 |
| Algoma District | 52 | $332,517 | 44 | $251,991 | 31 | $234,839 |
| Manitoulin District | 31 | $210,651 | 33 | $194,939 | 20 | $129,474 |
| Sables-Spanish Rivers | 9 | $82,184 | 5 | $14,311 | 5 | $13,092 |

N/A denotes that too few farms have reported data to ensure confidentiality.
Source: Statistics Canada, 1996, 2001, 2006.

As shown in Table 5.17, approximately 11% of the farms in the Study Area reported total gross farm receipts of $100,000 or more in 2005 compared to 16% for northern Ontario and 32% for the province as a whole. Approximately 37% of the farms in the Study Area reported less than $10,000 in total gross farm receipts in 2005 compared to 38% for northern Ontario and 25% for the province as a whole.

**Table 5.17: Total Gross Farm Receipts (Excluding Sales of Forest Products from Farms) for the Study Area, Northern Ontario and Ontario by Receipts Category, 1995 and 2006**

| | Gross Farm Receipts Category | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Under $10,000 | | $10,000 to $24,999 | | $25,000 to $49,999 | | $50,000 to $99,999 | | $100,000 to $249,999 | | $250,000 to $499,999 | | $500,000 and over | | Total farms | |
| | # farms | % | # farms | % | # farms | % | # farms | % | # farms | % | # farms | % | # farms | % | # farms | % |
| **1995** | | | | | | | | | | | | | | | | |
| Ontario | 20,306 | 30% | 12,010 | 18% | 8,162 | 12% | 7,477 | 11% | 11,642 | 17% | 5,513 | 8% | 2,410 | 4% | 67,520 | 100% |
| Northern Ontario Region | 1,399 | 48% | 621 | 21% | 268 | 9% | 216 | 7% | 265 | 9% | 107 | 4% | 39 | 1% | 2,915 | 100% |
| Study Area | 369 | 50% | 175 | 24% | 69 | 9% | 55 | 7% | 47 | 6% | 16 | 2% | 8 | 1% | 739 | 100% |
| Algoma District | 192 | 53% | 83 | 23% | 28 | 8% | 22 | 6% | 25 | 7% | 9 | 2% | 6 | 2% | 365 | 100% |
| Manitoulin District | 138 | 44% | 81 | 26% | 40 | 13% | 31 | 10% | 20 | 6% | 5 | 2% | 1 | 0% | 316 | 100% |
| Sables-Spanish Rivers | 39 | 67% | 11 | 19% | 1 | 2% | 2 | 3% | 2 | 3% | 2 | 3% | 1 | 1.7% | 58 | 100% |
| **2005** | | | | | | | | | | | | | | | | |
| Ontario | 14,500 | 25% | 10,828 | 19% | 7,397 | 13% | 6,521 | 11% | 7,965 | 14% | 5,589 | 10% | 4,411 | 8% | 57,211 | 100% |
| Northern Ontario Region | 946 | 38% | 558 | 23% | 358 | 14% | 236 | 10% | 195 | 8% | 123 | 5% | 63 | 3% | 2,479 | 100% |
| Study Area | 235 | 37% | 172 | 27% | 92 | 14% | 67 | 10% | 53 | 8% | 16 | 2% | 7 | 1% | 642 | 100% |
| Algoma District | 131 | 39% | 90 | 27% | 46 | 14% | 33 | 10% | 21 | 6% | 9 | 3% | 5 | 1% | 335 | 100% |
| Manitoulin District | 81 | 31% | 69 | 27% | 39 | 15% | 32 | 12% | 31 | 12% | 5 | 2% | 1 | 0% | 258 | 100% |
| Sables-Spanish Rivers | 23 | 47% | 13 | 27% | 7 | 14% | 2 | 4% | 1 | 2% | 2 | 4% | 1 | 2.0% | 49 | 100% |

Source: Statistics Canada, 1996, 2006.

The Study Area reported $29.6 million in total farm operating expenses in 2005 compared to $27.9 million in 1995 (Table 5.18). Total expenses per farm in the Study Area are, on average, lower than other parts of northern Ontario and substantially lower than the provincial average. Farms in the Study Area averaged $46,165 in farm expenses in 2005, compared to $61,266 per farm in northern Ontario and $154,584 per farm in Ontario.

**Table 5.18: Average Farm Operating Expenses per Farm in the Study Area, Northern Ontario and Ontario, 1995-2005**

| | 1995 | | | 2005 | | |
|---|---|---|---|---|---|---|
| | Total number of farms | Total farm operating expenses | Average expenses per farm | Total number of farms | Total farm operating expenses | Average expenses per farm |
| Ontario | 67,520 | $6,545,516,325 | $96,942 | 57,211 | $8,843,882,426 | $154,584 |
| Northern Ontario Region | 2,915 | $133,749,010 | $45,883 | 2,479 | $151,879,475 | $61,266 |
| Study Area | 739 | $27,995,034 | $37,882 | 642 | $29,637,994 | $46,165 |
| Algoma District | 365 | $15,463,311 | $42,365 | 335 | $17,581,358 | $52,482 |
| Manitoulin District | 316 | $10,631,227 | $33,643 | 258 | $10,277,410 | $39,835 |
| Sables-Spanish Rivers | 58 | $1,900,496 | $32,767 | 49 | $1,779,226 | $36,311 |

Source: Statistics Canada, 1996, 2006.

Although the data is incomplete for Sables-Spanish Rivers, we can examine the distribution of farm operating expenses by expense category for Algoma – Manitoulin. The analysis reveals that 23% ($6.3 million) of total operating expenses in the Study Area were tied to livestock expenses in 2005 while wages and salaries accounted for at least 18% ($5.1 million) of the total farm operating expenses. In 2005, fuel expenses accounted for 9% ($2.6 million) of the total operating expenses and crop expenses accounted for 8.5% ($2.4 million) of the total farm operating expenses (Table 5.19). Wage related expenses appear to account for a higher proportion of total farm operating expenses in the Study Area compared to northern Ontario as a whole and the province (18% vs. 16% and 14%).

**Table 5.19: Farm Operating Expenses by Expense Category for the Study Area, Northern Ontario and Ontario, 1995 and 2005**

| | Total farms | Total farm business operating expenses | Total wages and salaries [a] | Total crop expenses [b] | Total livestock expenses [c] | Electricity, telephone and all other tele-communication services | All fuel expenses (diesel, gasoline, oil, wood, natural gas, etc.) | Repairs and maintenance to farm machinery, equipment and vehicles | Repairs and maintenance to farm buildings and fences | All other expenses (excluding depreciation and capital cost allowance) [d] |
|---|---|---|---|---|---|---|---|---|---|---|
| **1995** | | | | | | | | | | |
| Ontario | 67,520 | $6,545,516,325 | $870,427,370 | $838,018,004 | $1,980,903,395 | $225,698,619 | $315,267,700 | $318,236,693 | $162,405,947 | $1,834,558,597 |
| Northern Ontario Region | 2,915 | $133,749,010 | $19,298,274 | $10,442,810 | $33,977,279 | $7,343,404 | $8,923,979 | $9,139,471 | $4,508,504 | $40,115,289 |
| Study Area | 739 | $27,995,034 | $3,029,082 | $2,028,725 | $8,711,525 | $1,436,246 | $1,879,974 | $1,797,797 | $902,060 | $8,209,625 |
| Algoma District | 365 | $15,463,311 | $2,226,952 | $1,399,279 | $4,111,090 | $758,883 | $1,008,040 | $974,209 | $495,351 | $4,489,507 |
| Manitoulin District | 316 | $10,631,227 | $592,914 | $564,769 | $3,843,594 | $551,644 | $747,972 | $697,118 | $362,666 | $3,270,550 |
| Sables-Spanish Rivers | 58 | $1,900,496 | $209,216 | $64,677 | $756,841 | $125,719 | $123,962 | $126,470 | $44,043 | $449,568 |
| **2005** | | | | | | | | | | |
| Ontario | 57,211 | $8,843,882,426 | $1,269,812,144 | $1,197,628,533 | $2,362,356,671 | $269,542,496 | $582,869,778 | $426,417,721 | $211,320,305 | $2,523,934,778 |
| Northern Ontario Region | 2,479 | $151,879,475 | $24,490,985 | $14,877,218 | $29,852,551 | $7,555,681 | $13,928,483 | $10,973,703 | $5,355,841 | $44,845,013 |
| Study Area | 642 | $29,637,994 | NA | $2,478,454 | NA | $1,409,017 | $2,764,816 | $2,075,000 | $1,191,546 | NA |
| Algoma District | 335 | $17,581,358 | $4,458,382 | $1,482,995 | $3,339,884 | $795,598 | $1,548,185 | $1,062,192 | $710,982 | $4,183,140 |
| Manitoulin District | 258 | $10,277,410 | $627,512 | $876,681 | $3,031,555 | $506,330 | $1,026,764 | $862,351 | $428,306 | $2,917,911 |
| Sables-Spanish Rivers | 49 | $1,779,226 | NA | $118,778 | NA | $107,089 | $189,867 | $150,457 | $52,258 | NA |

[a] Wages includes wages and salaries paid to family members
[b] Crop expenses includes fertilizer and lime, seed and plant purchases, herbicides, pesticides, etc.
[c] Livestock expenses includes feed purchases (including feed purchases from other farmers), livestock and poultry purchases, veterinary services, etc.
[d] Other expenses includes rental and leasing of farm machinery, equipment and vehicles; rental and leasing of land and buildings; custom work and contract work; and other expenses. It excludes depreciation and capital cost allowance.
Source: Statistics Canada, 1996, 2006.

In 2005, total net farm revenue in the Study Area amounted to $4.7 million. The average net revenue per farm in the Study Area in 2005 was $7,543 which is lower than the average for northern Ontario and Ontario as a whole (Table 5.20).

**Table 5.20: Total Net Farm Revenue and Net Revenue per Farm in the Study Area, Northern Ontario and Ontario, 1995 and 2005**

| | Total number of farms | Total gross farm receipts | Total farm expenses | Total net farm revenue | Net revenue per farm |
|---|---|---|---|---|---|
| **1995** | | | | | |
| Ontario | 67,520 | $7,778,476,483 | $6,545,516,325 | $1,232,960,158 | $18,261 |
| Northern Ontario Region | 2,915 | $151,786,040 | $133,749,010 | $18,037,030 | $6,188 |
| Study Area | 739 | $30,978,507 | $27,995,034 | $2,983,473 | $4,037 |
| Algoma District | 365 | $18,197,839 | $15,463,311 | $2,734,528 | $7,492 |
| Manitoulin District | 316 | $10,631,723 | $10,631,227 | $496 | $2 |
| Sables-Spanish Rivers | 58 | $2,148,945 | $1,900,496 | $248,449 | $4,284 |
| **2005** | | | | | |
| Ontario | 57,211 | $10,342,031,229 | $8,843,882,426 | $1,498,148,803 | $26,186 |
| Northern Ontario Region | 2,479 | $179,177,281 | $151,879,475 | $27,297,806 | $11,012 |
| Study Area | 642 | $34,394,355 | $29,637,994 | $4,756,361 | $7,409 |
| Algoma District | 335 | $20,095,138 | $17,581,358 | $2,513,780 | $7,504 |
| Manitoulin District | 258 | $12,150,387 | $10,277,410 | $1,872,977 | $7,260 |
| Sables-Spanish Rivers | 49 | $2,148,830 | $1,779,226 | $369,604 | $7,543 |

Source: Statistics Canada, 1996, 2006.

## 5.11 Agriculture Value Added

Value added is the unique business contribution to value for the sector being reviewed. It is the net of value added counted previously for components that are inputs to the sector.

One way to calculate value added in agriculture is to take the gross farm receipts and subtract operating expenses (except wages, interest, rent and property taxes) (Wolfe, Statistics Canada 1999). Total gross margin (the profit) is also included in value added. Total gross margin is the gross farm receipts minus operating expenses. These last items are not subtracted because they represent the value of labour and capital added to the original "inputs" into the commodity.

Each step in the value-added chain uses capital and labour to create employment. Consequently, the more "value" that is added to a product before final sale or export, the better it is for the economy, provided, of course, that demand is there. Adding value to a product is often translated into job creation and is viewed as essential to a flourishing economy. Farms can also have a negative value added when the amount spent on items other than labour and capital exceed the amount they receive in gross farm receipts.

The measure of value added can differ depending on the farm type. With an average of 60 cents of value added per dollar of gross farm receipts, tobacco farms have the highest share (i.e. they use the most labour and capital but fewer inputs) among all farm types, while beef farms rank last (21 cents) (Wolfe, Statistics Canada 1999). When comparing the value added for every dollar in gross farm receipts between beef farms and dairy farms for example, the value-added figures are very different. Producing cattle for slaughter usually requires less capital and labour. In contrast, dairy farms are far more labour and capital (equipment and machinery) intensive. On dairy farms, labour and expensive milking equipment are essential. Another major difference between beef and dairy operations is that beef operations work in an open market, whereas dairy operators work within a supply management system which controls production and price levels.

Farms in the Study Area produce a variety of goods such as grains, livestock, and dairy products. Because labour and other agricultural and non-agricultural goods such as seed, forage, fertilizer and technology are required to produce these goods, farming makes a considerable contribution to the total value added in the Study Area.

As shown in Table 5.21, the total value added component for agriculture in Algoma District amounted to $8 million in 2005. This translates into 40 cents of value added per dollar of gross farm receipts.

The total value added component for agriculture in Manitoulin District amounted to $3.5 million in 2005. This translates into 29 cents of value added per dollar of gross farm receipts.

The average value added component per farm associated with farms in Algoma District is close to the average for northern Ontario farms ($26,619 per farm).

**Table 5.21: Value Added Agriculture in the Study Area, Northern Ontario and Ontario, 1995-2005**

| | Total farms | Total gross farm receipts | Total farm operating expenses [a] | Total agriculture value added [b] | Value added per farm |
|---|---|---|---|---|---|
| **1995** | | | | | |
| Ontario | 67,520 | $7,778,476,483 | $5,042,199,846 | $2,736,276,637 | $40,525 |
| Northern Ontario Region | 2,915 | $151,786,040 | $101,698,083 | $50,087,957 | $17,183 |
| Study Area | 739 | $30,978,507 | $22,158,878 | $8,819,629 | $11,935 |
| Algoma District | 365 | $18,197,839 | $11,638,249 | $6,559,590 | $17,971 |
| Manitoulin District | 316 | $10,631,723 | $8,937,876 | $1,693,847 | $5,360 |
| Sables-Spanish Rivers | 58 | $2,148,945 | $1,582,753 | $566,192 | $9,762 |
| **2005** | | | | | |
| Ontario | 57,211 | $10,342,031,229 | $6,701,651,827 | $3,640,379,402 | $63,631 |
| Northern Ontario Region | 2,479 | $179,177,281 | $113,188,265 | $65,989,016 | $26,619 |
| Study Area | 642 | $34,394,355 | NA | NA | NA |
| Algoma District | 335 | $20,095,138 | $12,077,775 | $8,017,363 | $23,932 |
| Manitoulin District | 258 | $12,150,387 | $8,634,455 | $3,515,932 | $13,628 |
| Sables-Spanish Rivers | 49 | $2,148,830 | NA | NA | NA |

N/A denotes that too few farms have reported data to ensure confidentiality.
[a] Total farm operating expenses excluding wages, interest, rent and property taxes.
[b] Total Agriculture value added = (Total farm receipts – Total farm operating expenses excluding wages, interest, rent and property taxes).
Adapted from Statistics Canada, 1996, 2006.

## 5.12 Farm Capital

In 2005, the Study Area reported $309 million in total farm capital, which represents about 24% of the northern Ontario total (Table 5.22). The average farm capital value for farms in the Study Area in 2005 was $481,947 which is close to the average for northern Ontario ($509,793) but less than half the value of the provincial average of $1.1 million.

**Table 5.22: Total Farm Capital for the Study Area, Northern Ontario and Ontario, 1995 and 2005**

| | Total farms | Total farm capital - Market value [a] | Farm capital per farm | Number of farms reporting by total farm capital category | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Under $100,000 | $100,000 to $199,999 | $200,000 to $349,999 | $350,000 to $499,999 | $500,000 to $999,999 | $1,000,000 to $1,499,999 | $1,500,000 and over |
| **1995** | | | | | | | | | | |
| Ontario | 67,520 | $40,860,936,035 | $605,168 | 3,756 | 11,151 | 17,962 | 10,770 | 14,857 | 4,530 | 4,494 |
| Northern Ontario Region | 2,915 | $1,022,746,952 | $350,857 | 370 | 784 | 850 | 379 | 394 | 81 | 57 |
| Study Area | 739 | $259,980,661 | $351,801 | 87 | 210 | 203 | 107 | 99 | 17 | 16 |
| Algoma District | 365 | $121,966,144 | $334,154 | 51 | 113 | 98 | 51 | 37 | 5 | 10 |
| Manitoulin District | 316 | $121,302,277 | $383,868 | 30 | 75 | 90 | 49 | 56 | 10 | 6 |
| Sables-Spanish Rivers | 58 | $16,712,240 | $288,142 | 6 | 22 | 15 | 7 | 6 | 2 | 0 |
| **2006** | | | | | | | | | | |
| Ontario | 57,211 | $65,336,796,501 | $1,142,032 | 945 | 3,281 | 9,736 | 9,122 | 16,803 | 6,767 | 10,557 |
| Northern Ontario Region | 2,479 | $1,263,776,707 | $509,793 | 114 | 444 | 699 | 439 | 533 | 149 | 101 |
| Study Area | 642 | $309,410,243 | $481,947 | 25 | 121 | 177 | 120 | 133 | 44 | 22 |
| Algoma District | 335 | $138,324,091 | $412,908 | 15 | 77 | 101 | 62 | 58 | 16 | 6 |
| Manitoulin District | 258 | $151,403,035 | $586,833 | 8 | 37 | 57 | 47 | 68 | 25 | 16 |
| Sables-Spanish Rivers | 49 | $19,683,117 | $401,696 | 2 | 7 | 19 | 11 | 7 | 3 | 0 |

[a] Farm capital includes the value of farm machinery, livestock and poultry, and land and buildings.
Source: Statistics Canada, 1996, 2006.

## 5.13 Farm Operator Characteristics

In 2006, the Study Area reported a total of 890 farm operators, down from 995 operators in 1996 (Table 5.23).[23] In 2006, 71% of all farm operators in the Study Area were male and 29% were female. This compares to 69% males vs. 31% females for northern Ontario as a whole and 71% males vs. 29% females for the province. Over the 10 year period between 1996 and 2006, the proportion of female farm operators in the Study Area increased from 26% to 29%.

In 2006, the average age of farm operators in the Study Area was ranged from 53 years in Sables-Spanish Rivers to 55 years in Manitoulin District.

**Table 5.23: Characteristics of Farm Operators – Gender and Age, 1996-2006**

| | Total number of operators | Gender | | Age Category | | | Average age of operators (yrs) |
|---|---|---|---|---|---|---|---|
| | | # of male operators | # of female operators | Under 35 years | 35 to 54 years | 55 years and over | |
| **1996** | | | | | | | |
| Ontario | 96,940 | 71,050 | 25,895 | 13,835 | 49,000 | 34,105 | 49 |
| Northern Ontario Region | 4,180 | 3,010 | 1,170 | 575 | 2,190 | 1,415 | 49 |
| Study Area | 995 | 740 | 255 | 105 | 510 | 380 | NA |
| Algoma District | 510 | 355 | 155 | 55 | 275 | 180 | 50 |
| Manitoulin District | 400 | 325 | 75 | 40 | 190 | 170 | 52 |
| Sables-Spanish Rivers | 85 | 60 | 25 | 10 | 45 | 30 | 51 |
| **2006** | | | | | | | |
| Ontario | 82,410 | 58,875 | 23,530 | 7,070 | 40,280 | 35,065 | 53 |
| Northern Ontario Region | 3,570 | 2,470 | 1,095 | 270 | 1,755 | 1,540 | 53 |
| Study Area | 890 | 635 | 245 | 45 | 410 | 435 | NA |
| Algoma District | 480 | 330 | 150 | 30 | 230 | 220 | 54 |
| Manitoulin District | 345 | 260 | 75 | 10 | 145 | 190 | 55 |
| Sables-Spanish Rivers | 65 | 45 | 20 | 5 | 35 | 25 | 53 |

Source: Statistics Canada, 1996, 2006.

Table 5.24 provides data on the types and number of farm operation arrangements in the Study Area, northern Ontario and Ontario between 1996 and 2006. The majority of farms in the Study Area, northern Ontario and Ontario continue to be managed under a sole proprietor operating arrangement. In the Study Area, sole proprietorship type farms

[23] In 1996 and 2006, "farm operators" was defined as those persons responsible for the day-to-day management decisions made in the operation of a census farm or agricultural operation. Up to three farm operators could be reported per farm. Prior to the 1991 Census of Agriculture, the farm operator referred to only one person responsible for the day-to-day decisions made in running an agricultural operation.

account for 68% of all farms which is higher than the provincial average (56%) but comparable to the northern Ontario average (63%).

There was only a small change in the percentage of farms managed under a sole proprietorship arrangement in the Study Area between 1996 and 2006. Additional details on farm operation arrangements are presented in Table 5.24.

**Table 5.24: Farm Operating Arrangements for the Study Area, Northern Ontario and Ontario, 1996-2006**

| | Number of farms | Operating Arrangement | | | | | |
|---|---|---|---|---|---|---|---|
| | | Sole proprietor-ship [a] | Partnership with no written agreement [b] | Partnership with a written agreement | Family corporation [c] | Non-family corporation [d] | Other (institution, community pasture, etc.) |
| **1996** | | | | | | | |
| Ontario | 67,520 | 38,465 | 15,242 | 5,834 | 6,972 | 937 | 70 |
| Northern Ontario Region | 2,915 | 1,820 | 616 | 223 | 210 | 41 | 5 |
| Study Area | 739 | 489 | 154 | 40 | 50 | 6 | 0 |
| Algoma District | 365 | 228 | 79 | 21 | 34 | 3 | 0 |
| Manitoulin District | 316 | 226 | 58 | 16 | 13 | 3 | 0 |
| Sables-Spanish Rivers | 58 | 35 | 17 | 3 | 3 | 0 | 0 |
| **2006** | | | | | | | |
| Ontario | 57,211 | 31,755 | 13,953 | 3,178 | 7,538 | 733 | 54 |
| Northern Ontario Region | 2,479 | 1,566 | 599 | 104 | 166 | 36 | 8 |
| Study Area | 642 | 434 | 137 | 29 | 34 | 5 | 3 |
| Algoma District | 335 | 216 | 76 | 15 | 23 | 4 | 1 |
| Manitoulin District | 258 | 186 | 50 | 13 | 6 | 1 | 2 |
| Sables-Spanish Rivers | 49 | 32 | 11 | 1 | 5 | 0 | 0 |

[a] Sole proprietorship operation: an agricultural operation where one person owns the non-incorporated business. The person who owns the business may or may not own the land, buildings, machinery, etc. There may be multiple operators (persons responsible for the day-to-day management decisions) such as husband and wife, father and son.
[b] Partnership with or without a written agreement: an agricultural operation where the business is owned and operated jointly by two or more persons with or without a written agreement and where risks and profits are shared.
[c] Family corporation: an agricultural corp. in which an individual or family owns the majority of the shares.
[d] Non-family corporation: an agricultural corp. in which a group of unrelated individuals owns the majority shares.
Source: Statistics Canada, 1996, 2006.

Agriculture has experienced significant structural change over recent decades as farm size, intensity, capitalization and specialization have dramatically moved from traditional to industrial configurations. Agricultural restructuring refers to the adjustments that the farm community has made in order to cope with the changing and demanding economic, technological and market environments that have developed in the post-war period. Adjustments are made at the farm level as operators attempt to remain profitable (Parsons, 1999. p. 345).

One of the more notable farm changes occurring with restructuring is the fact that many farm operators have taken off-farm work to supplement the inadequate returns they receive from commodities to cover the costs of their farm expenses (Statistics Canada, The Daily: Farmers Leaving the Field, Feb. 22, 2002).

At the national level, the 2006 Census of Agriculture revealed that younger farm operators and operators with a university degree were more likely to be engaged in off-farm work, as were male operators compared with female operators. The level of gross farm revenue was also a factor in off farm work as operators with lower farm revenues were more engaged in off-farm work categories (Statistics Canada, The Daily: Off Farm Work by Farmers, March 9, 2009).

As shown in Table 5.25, 460 of the 880 farm operators (52%) in the Study Area reported working off the farm in 2005. This is fairly comparable to the percentage reported for the northern Ontario region (54%) and Ontario as a whole (50%).

Between 1995 and 2005 the proportion of Study Area farm operators working off the farm increased from 35% to 52%. The increased involvement in off-farm jobs is a consistent trend for farm operators across Ontario.

**Table 5.25: Number of Farm Operators by Hours of Farm and Non-farm Work, for the Study Area, Northern Ontario and Ontario, 1995-2005**

| | Total operators | Hours per week spent working for the agricultural operation | | | Hours per week of paid work (not related to the agricultural operation) | | | |
|---|---|---|---|---|---|---|---|---|
| | | Less than 20 | 20 to 40 | More than 40 | None | Less than 20 | 20 to 40 | More than 40 |
| **1995** | | | | | | | | |
| Ontario | 96,940 | 27,565 | 25,490 | 43,885 | 66,105 | 6,575 | 13,300 | 10,960 |
| Northern Ontario Region | 4,180 | 1,270 | 1,215 | 1,695 | 2,665 | 320 | 660 | 535 |
| Study Area | 995 | 305 | 285 | 410 | 650 | 75 | 160 | 110 |
| Algoma District | 510 | 170 | 165 | 175 | 325 | 25 | 95 | 60 |
| Manitoulin District | 400 | 105 | 95 | 200 | 260 | 45 | 65 | 35 |
| Sables-Spanish Rivers | 85 | 30 | 25 | 35 | 65 | 5 | 0 | 15 |
| **2005** | | | | | | | | |
| Ontario | 82,410 | 24,480 | 22,400 | 35,520 | 41,550 | 7,325 | 15,205 | 18,320 |
| Northern Ontario Region | 3,570 | 1,050 | 1,075 | 1,445 | 1,655 | 370 | 760 | 790 |
| Study Area | 890 | 255 | 250 | 385 | 420 | 90 | 190 | 180 |
| Algoma District | 480 | 150 | 145 | 195 | 210 | 50 | 110 | 105 |
| Manitoulin District | 345 | 90 | 85 | 165 | 170 | 35 | 70 | 60 |
| Sables-Spanish Rivers | 65 | 15 | 20 | 25 | 40 | 5 | 10 | 15 |

Source: Statistics Canada, 1996, 2006.

## 5.14 Study Area Districts Compared to Other Northern Ontario Districts

Table 5.26 provides an overview of farm characteristics for the 11 Districts in northern Ontario.

In 2005, Algoma District was the 3rd ranked District in northern Ontario in terms of total gross farm receipts while Manitoulin District ranked 7th.

The Study Area as a whole has more farmland than any single District in northern Ontario and the second largest area of farmland in crop production after Temiskaming District. The Study Area also has the second highest amount of total gross farm receipts after Temiskaming District.

**Table 5.26: Agricultural Characteristics for Northern Ontario Districts, 2006 – Ranked by Total Gross Farm Receipts**

| | Total number of farms | Total number of operators | Average age of operators | Total area of workable and non-workable land (acres) [d] | Land in crops (acres) | % of farmland in crops | Average farm size (acres) | Total gross farm receipts (2005) | Total farm operating expenses (2005) | Net revenue per farm (2005) | Net revenue per acre farmland (2005) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ontario | 57,211 | 82,410 | 53 | 13,310,216 | 9,046,383 | 68% | 233 | $10,342,031,229 | $8,843,882,426 | $26,186 | $113 |
| Northern Ontario Region | 2,479 | 3,570 | 53 | 1,022,060 | 380,186 | 37% | 412 | $179,177,281 | $151,879,475 | $11,012 | $27 |
| **Northern Ontario Districts** | | | | | | | | | | | |
| Temiskaming | 471 | 700 | 51 | 205,800 | 114,118 | 55% | 437 | $49,834,957 | $40,032,383 | $20,812 | $48 |
| Thunder Bay | 252 | 375 | 51 | 61,850 | 29,420 | 48% | 245 | $32,305,551 | $24,575,742 | $30,674 | $125 |
| ***Algoma*** | ***335*** | ***480*** | ***54*** | ***95,814*** | ***38,292*** | ***40%*** | ***286*** | ***$20,095,138*** | ***$17,581,358*** | ***$7,504*** | ***$26*** |
| Rainy River | 312 | 420 | 52 | 211,625 | 59,374 | 28% | 678 | $13,152,226 | $12,701,240 | $1,445 | $2 |
| Nipissing | 272 | 395 | 52 | 83,747 | 35,411 | 42% | 308 | $12,777,360 | $12,349,810 | $1,572 | $5 |
| Sudbury [a] | 143 | 205 | 53 | 50,799 | 18,411 | 36% | 355 | $12,611,432 | $10,363,532 | $15,720 | $44 |
| ***Manitoulin*** | ***258*** | ***345*** | ***56*** | ***178,144*** | ***34,279*** | ***19%*** | ***690*** | ***$12,150,387*** | ***$10,277,410*** | ***$7,260*** | ***$11*** |
| Cochrane | 184 | 270 | 55 | 75,236 | 28,437 | 38% | 409 | $11,195,641 | $10,426,510 | $4,180 | $10 |
| Parry Sound [b] | 338 | 485 | 56 | 82,617 | 22,625 | 27% | 244 | $11,144,542 | $11,155,989 | -$34 | $0 |
| Greater Sudbury | 160 | 245 | 53 | 22,892 | 8,667 | 38% | 143 | $9,576,636 | $8,918,528 | $4,113 | $29 |
| Kenora | 92 | 130 | 54 | 36,153 | 13,777 | 38% | 393 | $5,477,953 | $4,652,962 | $8,967 | $23 |
| ***Study Area [c]*** | ***642*** | ***890*** | ***54*** | ***292,359*** | ***78,236*** | ***27%*** | ***455*** | ***$34,394,355*** | ***$29,637,994*** | ***$7,409*** | ***$16*** |

[a] Including Sables-Spanish Rivers.
[b] Parry Sound District is not part of the Northern Ontario Agricultural Region as defined by Statistics Canada but is included as part of this study to be consistent with previous agri-economic impact research in northeastern Ontario.
[c] The study area includes Algoma District, Manitoulin District, and the Township of Sables-Spanish Rivers in Sudbury District.
[d] Workable land includes all arable or cleared lands including area in hay, crops, summer fallow, and tame or seeded pasture land. Non-workable land includes woodlots (sugar bushes, tree windbreaks, and bush that is not used for grazing), natural pastureland, wetlands, ponds, bogs, sloughs, etc., barnyards, lanes, etc., and land on which farm buildings are located.
Source: Statistics Canada 2006.

## 5.15 Agri-Sector Stakeholder Review of the Census Data

Key informant interviews were conducted with seven agri-sector stakeholders from the Study Area in December 2009 to review findings from the 2006 Census data. Stakeholders interviewed included representatives from a variety of sectors including dairy, beef, sheep/lambs, alpaca, and field crops. The OFA Member Service Representative for the region also participated in the session.

The following key points were raised by the agri-sector stakeholders:

- Agri-sector stakeholders confirmed that there has been a general decline in livestock farms in the region, particularly in the beef and dairy sectors. However, it was also noted that several new farming operations were established in recent years with the arrival of some Mennonite families.

- It was reported that there has been significant consolidation in the beef sector since 2001 when the initial agri-economic impact study was conducted. Key factors contributing to consolidation include the BSE crisis in 2003 and continuing depressed beef prices.

- It was reported that at least one dairy farm in Algoma District and two dairy farms in Manitoulin District are no longer operating since the 2006 Census. It was reported that some dairy operations have transitioned to cash crops. However, there has also been at least one new dairy farm established on the north shore since 2006.

- It was reported that approximately four sheep/lamb farms which had large flocks are no longer operating since the 2006 Census. It was further reported that the inventory of sheep/lambs in Algoma District currently stands at about 1,200 to 1,300 and some producers are continuing to reduce the size of their flock.

- Agri-sector stakeholders noted that forage crops continue to be a major cropping activity in the region. In reviewing the 2006 production figures for barley (3,629 acres) and oats (2,436 acres) in the Study Area, agri-sector stakeholders suggested that the acreage seemed high. It was also noted that there currently could be as much as 700 acres of land in corn production in the area.

- Agri-sector stakeholders suggest that a higher proportion of farmers in Algoma - Manitoulin are working off the farm than indicated in the Census (52% in 2006). It was suggested that perhaps only 20% of the farms in the region are deriving all of their income from farming.

## 5.16 Summary of Agriculture Characteristics

Key characteristics of the agriculture sector in the Algoma - Manitoulin region:

- The overall number of farms in the Algoma - Manitoulin region declined from 669 to 642 between 2001 and 2006 which is a consistent with an ongoing trend found in the large majority of Ontario counties/districts. Sables-Spanish Rivers in Sudbury District was one of the few areas of the province where the number of farms increased slightly between 2001 and 2006.[24]

- Since 1996, the average farm size in the Algoma - Manitoulin region increased from 404 acres to 455 acres. The increase in farm size is consistent with a general trend across the province and is linked to farm consolidation.

    - The average farm size in the region (455 acres) is slightly larger than the average for northern Ontario (412 acres) and much larger than the average for Ontario (233 acres).

    - Within the region there is considerable variation in average farm size. On average, farms in Manitoulin District are the largest at 690 acres while farms in Algoma District are the smallest at 286 acres.

- The Algoma - Manitoulin region reported a total of 292,354 acres of farmland in 2006, down from 298,494 acres in 1996. Historically, the region reported a much larger area of farmland. For example, in 1981, the region reported just over 342,000 acres of farmland (113,791 acres in Algoma District, 204,199 acres in Manitoulin District, and 24,303 acres in Sables-Spanish Rivers).

    - The climate and soil conditions in the region allow for the production of a variety of field crops including barley, wheat, oats, mixed grains, corn, canola, soybeans, and hay crops.

    - Approximately 78,236 acres or 27% of the total farmland base in the region was used for crop production in 2006 and the area in crop production is increasing. Historically, the region reported a larger area of farmland in crop production. For example, in 1981 the region reported 81,365 acres of farmland in crop production (38,494 acres in Algoma District, 37,362 acres in Manitoulin District, and 5,509 acres in Sables-Spanish Rivers) which suggests that there is considerable potential for expanding crop production in the region, especially with the use of tile drainage.

- The major farm production activities in the Algoma - Manitoulin region include beef production (39% of the farms are primarily engaged in this activity), hay/fodder

[24] Thunder Bay District is another area of northern Ontario where the number of farms actually increased between 2001 and 2006. The reversal in declining farm numbers is partly attributed to the growing interest in producing agricultural products for the local market.

production (32%), dairy production (4%), greenhouse, nursery or floriculture production (5%), and other types of animals including horses, bison, deer/elk, sheep, goats (14%).

- The number of farms reporting organic production in the Algoma - Manitoulin region increased considerably between 2001 and 2006. In 2006, a total of 63 farms reported that they produced organic products (including fruits, vegetables and animal and/or animal products) compared to only 3 farms in 2001.

- Given the soil and climate limitations in the Algoma - Manitoulin region, the area has a very productive agricultural sector. In 2005, the region reported $34.4 million in total gross farm receipts.

- Between 2001 and 2006, the number of jobs directly supported by agriculture in the Algoma - Manitoulin region declined from 805 to 620. However, farmers in the region are increasingly working off the farm and it is possible that some of the farming activity in the region is being underreported.

- Between 1995 and 2005 the proportion of farm operators working off the farm in the Algoma - Manitoulin region increased from 35% to 52%. The increase in off-farm employment activity is a consistent trend for farm operators across Ontario.

- The non timber forest product sector is growing in importance but is not captured in the Census data.[25]

- The economic contribution being made by First Nation communities is important even though much of this activity is not reflected in the Census data.

[25] Non timber forest products (NTFP) encompass all biological materials, other than timber, which are extracted from forests for human use. Examples include forest product fuels, resins, gums, essential oils, hemp, plant fibres for construction products, forest foods (wild berries, wild mushrooms, herbal tea plants, etc.), and floral, foliage and branch products (e.g. used in the manufacture of craft products). Estimating the contribution of NTFPs to national, regional and even local economies is challenging given the lack of broad-based systems for tracking the combined value of the hundreds of products that make up the various NTFP industries (McLain and Jones, 2005. p.1). In 2006, the total value of the NTFP forest bio-products industry to Canada's economy was estimated at close to $1 billion (Natural Resources Canada, April 2009).

## 6.0 Agri-Tourism, Agricultural Fairs, and Farmers' Markets

### 6.1 Agri-Tourism / Entertainment / Education

Agri-tourism is increasingly recognized as an important alternative farming activity that diversifies the economic base and provides educational opportunities to local residents and tourists.[26] In Ontario, agri-tourism activities typically combine travel to a rural setting and feature agricultural products (e.g. pick your own enterprises, road side stands, on-farm retail stores selling fresh produce and/or farm products) and/or activities (e.g. on-farm recreation/entertainment, harvest festivals, agricultural heritage museums, farm tours, and farm based bed and breakfast accommodation).

Studies at the provincial level in Canada provide important information about the economic contribution of agri-tourism/entertainment activities. For example, the agri-tourism sector in British Columbia employed 4,400 people in 2003 (of which 23% were full time year round positions) and the average agri-tourism operator generated revenue of $98,000 (Organization for Economic Co-operation and Development, 2009). Research completed in the United States has also shown that agri-tourism can be an important component of the local/regional agricultural industry and provide a substantial source of revenue for farmers (Leones, Dunn, Worden and Call, 1994; Allen, Gabe and McConnon, 2006).

The Study Area features a variety of agri-tourism/entertainment activities and destinations. Some examples of the attractions include:

<u>Algoma District</u>

- Rose Valley Maple Syrup in Echo Bay produces and sells all grades of wood-fired maple syrup from the farm year round. The farm also offers small bulk orders for commercial use such as restaurants or catering.
- Thompson's Maple Products on St. Joseph Island has been in operation since 1977 and is one of the largest maple syrup produces in Ontario. Visitors to the farm can observe how maple syrup is made. The farm can accommodate school groups and bus tours.
- Fairisle Maple Syrup on St. Joseph Island produces and sells maple syrup.
- Rainbow Ridge Farm on St. Joseph Island produces a variety of fresh produce for sale including corn, pumpkins, and vegetables.
- Rains Homestead Century Farm Bed and Breakfast is a fifth generation farm on St. Joseph Island and maintains the traditions of early settlers.
- Desbarats Country Produce in Desbarats is a family grower co-op retail-wholesale outlet. The market is open to public and by appointment to commercial businesses. The market specializes in locally grown produce and vegetables, locally processed products, maple syrup, jams, jellies, relishes, baking, etc.

[26] Agri-tourism has its roots in the Italian term agritourismo - the concept of bringing urban residents to farming areas for recreation and to facilitate an understanding of the origin of their food. As small scale farming in Italy became less profitable starting in the 1950s, farmers began to incorporate tourism related activities in their operations to augment their income.

- Penokean Hills Farms is a group of farmers who raise cattle without the use of growth hormones or antibiotics. The organization provides consumers with a wide selection of high quality, natural beef products.
- Meadowview Alpaca Farm in Bruce Mines raises and shears alpacas for their luxury fibre. The farm sells yarns and finished products. The farm also sells breeding stock.
- Cedar Rail Ranch Thessalon offers day long horse trail rides as well as overnight horseback riding vacation packages and activities such as boating, fishing, canoeing, sleigh rides, cross-country skiing, trout pond and petting farm.
- Country Road Open House is a self guided tour of on St. Joseph Island that runs the weekend before Thanksgiving weekend. The tour was established in 1995 and includes several farm stops where farm produce is for sale.

Manitoulin District

- Almost Heaven in Tehkummah features pick your own strawberries as well as a full range of vegetables in season and raspberries by order.
- Burt Farm Country Meats near Kagawong features a full line of retail cuts, fresh sausage, and many processed meats. All meat is raised and processed on Burt Farm. The meat is free of growth hormones and sub-therapeutic antibiotics.
- Gypsy Family Farm in Evansville is one of the largest organic market gardens in the Manitoulin / Sudbury area.
- Kicking Mule Ranch near Providence Bay offers horse riding experiences for both beginners and experienced riders. The Ranch also offers cookouts, wagon rides and breakfast rides.

Sudbury District

- Ruby Family Farm in Massey features pick your own strawberries.
- Rock Garden Bed and Breakfast in Massey (Sudbury District) is situated on the Emiry family dairy farm. Visitors are welcome to tour the farm and watch the cows being milked.

The Study Area also features a number of agricultural fairs/exhibitions and farmers' markets which are examined in greater detail below.

## 6.2 Agricultural Fairs

A recent study conducted by the Canadian Association of Fairs and Exhibitions (CAFE) revealed that agricultural fairs can provide significant economic and social benefits for communities. The study found that the average small fair in Canada (i.e. less than 50,000 visitors) has a $750,000 impact on the local economy and supports approximately 8 full-year positions (Enigma Research Corporation, 2009).[27]

The CAFE study also revealed that the majority of attendees at small fairs place a high value on learning about agriculture and 75% of attendees agree that education programs enhance the experience at the fair. This interest indicates that there are opportunities to partner with private and public sector stakeholders for promoting educational opportunities. The study also determined that the large majority of attendees (90%+) value fairs as an important tradition and major social gathering event (Enigma Research Corporation, 2009).

As shown in Table 6.1, the Study Area features several agricultural fairs/exhibitions.

**Table 6.1: Agricultural Fairs in the Study Area (2009)**

| Name of Fair | Date (2009) | Website | Agricultural Features |
|---|---|---|---|
| Laird Fair | Aug. 14-16 | NA | Heavy and light horse shows, livestock, tractor pulls |
| Providence Bay Fair | Aug. 21-23 | www.manitoulin-island.com/providence-bay-fair/index.html | Heavy and light horse pull, cattle and horse shows |
| Massey Fair | Aug. 28-30 | www.masseyfair.ca/ | Cattle, small livestock, poultry, horse shows, horse pull, Western and English Games |
| Bruce Mines | Sept. 11-13, 2009 | bruceminesfair.com/ | Vegetable displays, light and heavy horse shows |
| Manitowaning Fair | Sept. 11-13, 2009 | NA | NA |
| Iron Bridge Fair | Sept. 12, 2009 | NA | NA |

Source: Ontario Association of Agricultural Societies ( www.ontariofairs.org/cms/ ) and the respective fair websites.

[27] The study involved a survey of 2,400 attendees at 6 small fairs across Canada: Abbotsford Agrifair (British Columbia), Carp Fair (Ontario), Expo Shawville (Quebec), Expo Brome Fair (Quebec), FREX Fredericton Exhibition (New Brunswick), Cape Breton County Exhibition (Nova Scotia).

## 6.3 Farmers' Markets

Recent studies on farmers' markets indicate that they are experiencing a resurgence of popularity in Ontario and are playing an important role in the marketing of local agricultural products and generating farm income.

A 2008 study completed by Farmers' Markets Ontario (FMO) demonstrates the significant economic and social benefits that markets provide to communities.[28] In 2008, the total estimated economic impact of Ontario farmers markets was at least $641 million.[29] The study also determined that sales at Ontario farmers' markets are growing on an annual basis – between 1998 and 2008 the estimated compound annual growth in direct sales at farmers' markets was 7.3%.[30] Average in-market spending by customers at Ontario farmers' markets in 2008 amounted to $27.67 per visit; ranging from $21.99 at small markets to $33.94 at large markets (Experience Renewal Solutions Inc., Jan. 2009).[31]

Farmers' markets also play an important role in supporting and generating local employment. The 2008 FMO study determined that 55% of vendors reported the creation of up to 5 jobs as a result of their participation at the market (e.g. jobs linked to preparing products for the market, assisting the farmer/vendor at the market) (Experience Renewal Solutions Inc., Jan. 2009)

Part of the recent growth of farmers' markets can be attributed to consumer interest in fresh, in-season, locally produced foods. As found in the 2008 FMO study, close to 60% of Ontario market customers reported that fresh produce was their primary reason for visiting the market (Experience Renewal Solutions Inc., Jan. 2009).

[28] The Ontario Farmers' Market impact study was completed as part of the National Farmers' Market Impact Study that was conducted in the same 2008 period (July to October). The study was conducted by Experience Renewal Solutions Inc. on behalf of Farmers' Markets Ontario. A total of 70 farmers' markets participated in the National Study including 36 markets from Ontario. Over 1,800 shoppers were interviewed at the 36 Ontario markets. Only one market in northern Ontario, the Downtown Sudbury Farmers' Market, was represented in the study.

[29] Total farmers' market direct sales in Ontario in 2008 were estimated to be in the range of $421 million to $641 million. Based on a conservative multiplier of 1.5, markets in Ontario are estimated to contribute at least $641 million to the provincial economy, while a multiplier of 3.0 estimates that markets could be contributing as much as $1.9 billion to the provincial economy (Experience Renewal Solutions Inc., January 2009).

[30] The 1998 baseline study of farmers' markets involved 19 markets across Ontario including 3 markets in northern Ontario: Sudbury Farmers' Market, Timmins Country Market, and Clover Valley Farmers' Market (Fort Frances). The 1998 study determined that on a provincial average, customers spent just under $20 per visit to the market. Additionally, multipliers associated with agriculture and other special events like agricultural fairs, suggested that for every dollar spent in the market, another two dollars rippled through the provincial economy. These dollars were spent by the businesses that supply the farmers that sell goods in the market, the purchases of retail goods and services by employees in the market, and by customers who stopped to make other purchases while on a trip to the market (Cummings, Kora and Murray, 1999).

[31] Small markets are defined in the study as markets with fewer than 20 vendors while large markets have 40 or more vendors.

The local trend toward a greater preference for fresh food reflects a wider global trend. A recent survey conducted by Ipsos Marketing of approximately 1,000 consumers in 18 different countries found that fresh ingredients along with environmentally friendly packaging are growing priorities influencing food purchasing decisions (Canadian Broadcasting Corporation, June 12, 2009).

Consumers are also showing a greater interest in knowing where their food is produced and who is benefiting from their spending habits. A national survey by Ipsos Reid in 2006 revealed that 70% of Canadians recognize the importance of buying locally grown/produced fruits, vegetables, and meat to help the local economy and support family farmers and the majority of Canadians (56%) always or usually check to see where their fresh fruit and vegetables come from (Ipsos Reid, Dec. 1, 2006).[32]

The results from the 2008 FMO study support the above findings as almost 70% of Ontario farmers' market customers reported that buying directly from a local farmer was extremely important to them (Experience Renewal Solutions Inc., Jan. 2009).[33]

Beyond the economic benefits that farmers' markets generate, customers and vendors are also attracted by the social aspect and sense of community that the market promotes.

Some of the market challenges identified by Ontario market vendors in the 2008 FMO study include: providing a selection of fresh products while dealing with labour and cost of production issues, responding to consumer interest in year round product selection, and increasing pressures associated with meeting health and safety requirements/regulations (Experience Renewal Solutions Inc., Jan. 2009).

The 2008 FMO study also involved a survey of shoppers not using farmers' markets and determined that the key factors limiting their use of markets is convenience (e.g. location and/or time of operation) and lack of awareness issues. The FMO study concludes that "future growth (of the farmers' market) sector will require engaging non-users through increased awareness of benefits, locations, and product selection. Trial usage among non-users will be dependent on making local market hours and locations more accessible to time challenged, health conscious consumers." (Experience Renewal Solutions Inc., January 2009).

As shown in Table 6.2, the Study Area features at least 10 farmers' markets.

[32] The survey results are based on a random sample of 1,091 adult Canadians, weighted by region, age, and gender according to Census data. The results are considered accurate to within ± 3.0 percentage points, 19 times out of 20, of what they would have been had the entire adult population been polled.

[33] Consumer interest in locally produced foods is changing the way some food retail stores are operating in Ontario. In southwestern Ontario, a group of nine grocery stores recently ended their franchise arrangements with a large national grocery chain in order to stock fresh pork, chicken and beef products that are sourced no further than 60km away (Canadian Broadcasting Corporation, July 14, 2009). Additionally, six Safeway grocery stores in northwestern Ontario are starting to make locally grown food available on their shelves (Northern Ontario Business. June 22, 2009).

**Table 6.2: Farmers' Markets in the Study Area**

| Name of Market (year established) | Community | Operating Days & Hours | Operating Months | Approx. # of Vendors |
|---|---|---|---|---|
| Algoma Farmers' Market (1930) | Sault Ste. Marie | Sat. 8am to 12noon<br>Wed. 2pm to 6pm | June to Oct | 18 |
| Desbarats Farmers' Market (2007) | Desbarats | Fri. 3pm to 6pm<br>Sat. 9am to 11am | July to Sept.<br>Sept. to Oct. | NA |
| Iron Bridge Farmers' Market | Iron Bridge | Sat. 9am to 2pm | July to Oct. | NA |
| Gore Bay Farmers' Market (1989) | Gore Bay | Fri. 9am to 1pm | May to Oct. | 20-39 |
| Little Current Farmers' Market (2007) | Little Current | Tues. 2pm to 6pm | May to Oct. | 10-20 |
| Mindemoya Farmers' Market (1989) | Mindemoya | Sat. 9am to 1m | May to Oct. | 17-25 |
| M'Chigeeng Farmers' Market (2007) | M'Chigeeng | Sat. 9am to 12noon | May to Oct. | 10-20 |
| NEMI Farmers' Market (2007) | Little Current | Sat. 9am to 12noon | May to Oct. | 10 |
| South Baymouth Farmers' Market | South Baymouth | Sun. 10am to 12noon | July to Aug. | NA |
| Spanish Outdoor Market (1992) | Spanish | Sat. 9am to 3:30pm | June to Oct. | 5 to 25 |

NA = not available.
Source: Farmers' Markets Ontario (www.farmersmarketsontario.com/Markets.cfm ) and/or respective market or community websites.

## 7.0 Agricultural Related Businesses and Economic Impact

### 7.1 Introduction

An economic impact study of the agriculture sector in the Algoma Manitoulin region was conducted in 2001-2002 and updated in 2004 (Cummings and Associates. 2004). The economic impact was measured through an accounting of the total sales and employment of Agriculture and Agriculture-related (agri-related) businesses located in the Study Area. This work involved an assessment of the direct, indirect and induced impacts of agriculture on the local economy. The methodology used in the 2002 study as outlined below was consistent with other agri-impact assessments completed across Ontario. An overview of the theory and applications associated with economic impact analysis is described in greater detail in Appendix C.

#### *Direct Impacts*

Direct impacts refer to the on-farm jobs and farm gate sales generated by the agriculture sector in the District. This information was obtained from the Population Census of Canada and the Agricultural Census.

#### *Indirect Impacts*

Indirect impacts refer to jobs and sales generated 'off the farm' by agri-related businesses which interact directly with farm operations through buying and selling products and services. 'Agri-related' includes only those businesses that buy from or sell to the farm business; sales to farm families for personal consumption (e.g. household goods and services) are excluded from the indirect impact assessment, but are examined as part of the induced impact component.

The research method used to measure the indirect impacts in the 2001-2002 study was a survey-based 'input-output-like' approach. This was completed through a telephone survey conducted in August and September 2001. The method and survey format was originally developed by Dr. Harry Cummings for use in a similar survey in Huron County in 1996 (Cummings, Morris and McLennan, 1998), and used again with some modifications (primarily translation into French) in other areas of southern Ontario (1998 to 2003).

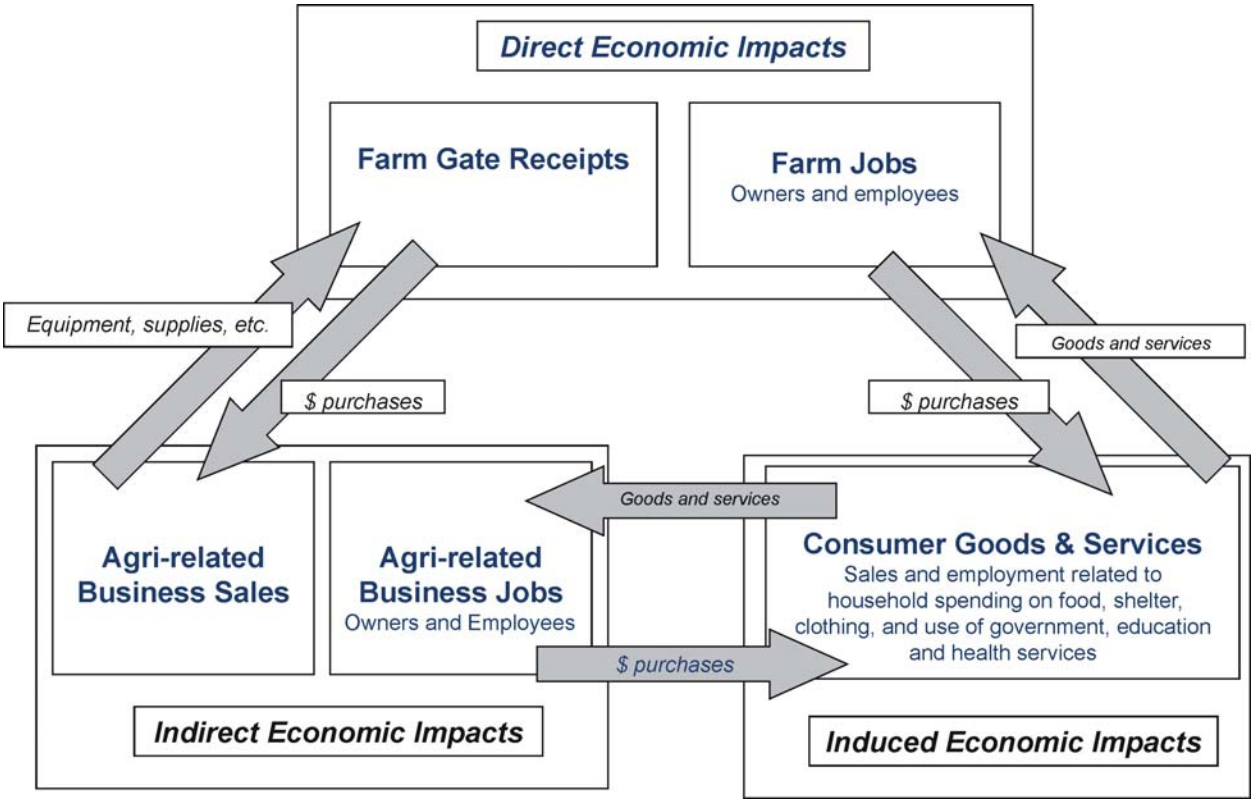
The methodology was designed to identify the value of gross sales and the jobs produced by a sample of agri-related businesses. From this sample, an estimate was produced for the total population of agriculture-related businesses in the Study Area. This in turn provided an estimate of the economic impact of agri-related businesses in the Study Area through indirect employment and sales.

### *Induced (Service Sector) Impacts*

An examination of the induced effects of agriculture was conducted. Induced employment refers to jobs in the service sector, especially Education, Government, and Health and Social Service sectors that are supported by the people employed in the agricultural sector or in agri-related businesses that use the services provided by these three service industries. Population Census employment data for the agriculture and manufacturing sectors were compared to employment data for the three government service sectors noted above to estimate the number of induced jobs in the Study Area.

Figure 7.1 illustrates the relationship between direct, indirect and induced economic linkages.

**Figure 7.1: Tracking the Economic Impacts of the Agriculture Sector**




While Figure 7.1 is useful in understanding key linkages in the agriculture sector, it does not reflect the overall complexity of the system. The system is actually a multitude of interconnected loops between various sectors with each sector impacted by a host of inputs and outputs which in turn change the inputs and outputs of the other sectors in the system. The system is not a closed system, in addition to changes experienced within the Study Area the system is also impacted by changes occurring elsewhere in the province, country and the world. Evidence of this can be seen in the effects of the

world wide embargo that was placed on Canadian beef as the result of a single case of bovine spongiform encephalopathy (BSE or mad cow disease) in Alberta in 2003. The closure of markets to Canadian beef resulted in significant financial losses for cattle producers across Canada as well as the businesses that supported and depended on this production activity.

## 7.2 Overview of Findings from the 2002 Agri-Economic Impact Study

### *Direct Impacts*

Based on the 2001 Census data that was available at the time of the 2002 study, the total number of direct on-farm jobs in the Study Area amounted to 805 while the value of total gross farm receipts in the Study Area amounted to $31.3 million.

### *Indirect Impacts*

In 2002, a total of 210 agri-related businesses were identified in the Study Area. In order to obtain a high level of confidence in the results (90%+) a total of 134 businesses were surveyed by random selection. The 134 businesses represented 10 different industrial sectors including retail trade, wholesales trade, construction, manufacturing, finance and insurance, professional services and other services (Cummings and Associates. 2004. p.53). The 2002 survey determined that the 134 agri-related businesses had $104,797,000 in total gross sales in 2000 of which $26,352,295 or 25% of total gross sales were related to agriculture (p.47).

An estimate the total gross agri-related sales for all 210 agri-related businesses in the Study Area was then derived from the sample of 134 businesses. By dividing the total number of businesses (210) by the total number of businesses that provided sales data (134), a sampling multiplier of 1.6 (i.e. 210/134 = 1.6) was used to estimate the total gross agri-related sales in the Study Area. The estimated total gross agri-related sales for the 210 agri-related businesses amounted to approximately $41.4 million in 2000 (p. 48).

With respect to jobs, the 134 agri-related businesses that provided employment data had 1,287 full time equivalent (FTE) employees. The number of agri-related jobs was estimated by applying the percentage of sales that were identified as agri-related to the total employment number. This translated into 152 FTE jobs related to agriculture for the 134 businesses. An estimate the total agri-related jobs for all 210 agri-related businesses in the Study Area was then derived from the sample of 134 businesses. By dividing the total number of businesses (210) by the total number of businesses that provided job data (134), a sampling multiplier of 1.6 (i.e. 210/134 = 1.6) was used to estimate the total agri-related jobs in the Study Area. The estimated total agri-related jobs for the 253 agri-related businesses amounts to 242 FTE jobs (p.50).

### *Induced (Service Sector) Impacts*

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 2002 study only the induced jobs were calculated.

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 and manufacturing) and service producing. The service component consists of public sector services (health and social services, education and government) and private sector services[34] (wholesale and retail trade, accommodation and restaurant, professional services, and finance and insurance related services). In this case we are trying to estimate what portion of the public sector workers are supported by agriculture and agri-related employment and expenditure. 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.

To make estimates of the induced jobs in the Study Area, a combination of three census subdivisions were used. Central Manitoulin in Manitoulin District; Sable-Spanish Rivers in the west portion of Sudbury District; and Sault Ste. Marie in Algoma District were selected to represent the Study Area as they had the greatest direct agriculture employment numbers in their respective Districts in 2001.

The total direct employment figure for the two primary production industries in the three census subdivisions, Agriculture and Manufacturing (185 and 5,510 respectively for a total of 5,695 jobs), was divided into the total number of jobs in the Health and Social Services, Education and Government sectors (4,705, 2,735 and 2,310 respectively for a total of 9,750 jobs). This calculation indicates that for every job created in the two primary production industries, 1.7 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 (805 direct and 242 indirect jobs for a total of 1,047 jobs X 1.7), it indicates that 1,780 induced jobs are supported by the agriculture sector (p.63).

[34] Estimates for the 'private sector services' were excluded 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.

### *Total Economic Impact*

As shown in Table 7.1, the 2002 study revealed that there were 805 direct, 242 indirect and 1,780 induced jobs sustained 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, were estimated to support a total of 2,827 jobs.

When the total employment figure is divided by the total number of direct agriculture jobs, we get a multiplier of 3.5. This calculation allows us to estimate that for every job in the agriculture sector, an additional 2.5 jobs are supported in the wider economy.

In terms of dollars, the total direct sales associated with the agricultural sector amounted to $31.3 million (2000) while indirect sales associated with agri-related businesses amounted to $41.4 million (2000). In total, approximately $72.7 million in agri-related sales were generated in the Study Area in 2000. When the total sales figure is divided by the total agri-related sales figure we get a sales expenditure multiplier of approximately 2.3. This calculation allows us to estimate that for every dollar generated by direct agricultural sales (farm gate sales), an additional $1.30 in sales related to agriculture is also generated. Please note, these are gross agriculture-related sales and no attempt has been made to identify the “net value-added” component.

**Table 7.1: Total Direct, Indirect and Induced Impacts of Agriculture in the Study Area, 2002**

| Impact | Sales | Jobs |
|---|---|---|
| Direct [a] | $31,325,530 | 805 |
| Indirect | $41,373,103 | 242 |
| Induced | | 1,780 |
| Total | $72,698,633 | 2,827 |

a Direct values are taken from Statistics Canada, Population Census and Census of Agriculture 2001.
Source: Cummings and Associates, 2004.

## 7.3 Update to 2002 Agri-Economic Impact Findings

### *Direct*

The direct economic impacts of agriculture in the Study Area were updated based on a review of 2006 Census data. In 2006, the agriculture sector in the Study Area directly supported 620 jobs and generated $34,394,355 in total gross farm receipts.

### *Indirect*

The cost constraints of the current study did not allow for a survey of agri-related businesses to update the indirect economic impacts of agriculture in the Study Area. Instead, the researchers used three business activity scenarios to estimate a range of possible indirect agri-economic impacts in the Study Area.

In the first scenario we assumed that the amount of agri-related business activity in the Study Area remained largely unchanged since 2002. In other words, the agriculture sector continues to indirectly sustain a total of 242 full time jobs and indirectly generates at least $41.4 million in agri-related sales in the local economy.

In the second scenario we assumed that the amount of agri-related business activity in the Study Area declined by 10% since 2002. In other words, the agriculture sector indirectly sustains a total 218 full time jobs and indirectly generates approximately $37.2 million in agri-related sales in the local economy.

In the third scenario we assumed that the amount of agri-related business activity in the Study Area increased by 10% since 2002. In other words, the agriculture sector indirectly sustains a total 266 full time jobs and indirectly generates approximately $45.5 million in agri-related sales in the local economy.

### *Induced (Service Sector) Impacts*

Current estimates of the induced jobs in the Study Area were derived from the 2006 Population Census data and focused on three municipalities in the Study Area: Northeastern Manitoulin and the Islands in Manitoulin District, Sables-Spanish Rivers in Sudbury District, and Huron Shores in Algoma District. These municipalities were selected to represent the Study Area as a whole as they each featured a substantial number of farm jobs in 2006. The total direct employment figure for the two primary production industries in the three municipalities, Agriculture and Manufacturing (160 and 345 respectively for a total of 505 jobs), was divided into the total number of jobs in the Health and Social Services, Education and Government sectors (460, 175 and 185 respectively for a total of 820 jobs).[35] This calculation indicates that for every job created in the two primary production industries, 1.6 induced jobs are supported in the three public service sectors.

When this number is applied to the total number of direct and indirect jobs related to agriculture in the Study Area (assuming no change in indirect jobs since 2002) it indicates that 1,400 induced jobs are supported by agriculture and agri-related businesses (620 direct and 242 indirect jobs for a total of 862 jobs X 1.6).

If we assume that the amount of agri-related business activity in the Study Area declined by 10% since 2002, the induced component would amount to 1,361 jobs (620 direct and 218 indirect jobs for a total of 838 jobs X 1.6). Alternatively, if we assume that the amount of agri-related business activity in the Study Area increased by 10% since

[35] In 2006, the Town of Northeastern Manitoulin and the Islands reported 70 jobs in agriculture, 60 jobs in manufacturing, 230 jobs in health services, 70 jobs in educational services, and 45 jobs in public administration. In 2006, the Township of Sables-Spanish Rivers reported 40 jobs in agriculture, 180 jobs in manufacturing, 165 jobs in health services, 40 jobs in educational services, and 115 jobs in public administration. In 2006, the Township of Huron Shores reported 50 jobs in agriculture, 105 jobs in manufacturing, 65 jobs in health services, 65 jobs in educational services, and 25 jobs in public administration (Statistics Canada, 2006).

2002, the induced component would amount to 1,439 jobs (620 direct and 266 indirect jobs for a total of 886 jobs X 1.6).

### *Total Economic Impact*

As shown in Table 7.2, the agriculture sector in the Study Area currently sustains between 2,199 and 2,325 direct, indirect and induced jobs. When we take the total employment figure and divide it by the total number of direct agriculture jobs, we get a multiplier that ranges from 3.5 to 3.8. This calculation allows us to estimate that for every job in the agriculture sector approximately 2 to 3 additional jobs are supported in the wider economy.

In terms of dollars, we estimate that the agricultural sector in the Study Area generates between $72 million and $80 million in direct and indirect sales. When we take the total sales figure and divide it by the total amount of direct sales, we get a sales expenditure multiplier that ranges from 2.1 to 2.3. This calculation allows us to estimate that for every dollar generated by direct agricultural sales (farm gate sales), an additional $1.10 to $1.30 in sales related to agriculture is also generated. Please note, these are gross agriculture-related sales and no attempt has been made to identify the "net value-added" component.

**Table 7.2: Total Direct, Indirect and Induced Impacts of Agriculture in the Study Area, 2006**

| Impact | Sales ($ million) | Jobs |
|---|---|---|
| **Low Estimate** | | |
| Direct [a] | $34.4 | 620 |
| Indirect | $37.2 | 218 |
| Induced | | 1,361 |
| Total | $71.6 | 2,199 |
| **Medium Estimate** | | |
| Direct [a] | $34.4 | 620 |
| Indirect | $41.1 | 242 |
| Induced | | 1,400 |
| Total | $75.5 | 2,262 |
| **High Estimate** | | |
| Direct [a] | $34.4 | 620 |
| Indirect | $45.5 | 266 |
| Induced | | 1,439 |
| Total | $79.9 | 2,325 |

[a] Direct values are taken from Statistics Canada, Population Census and Census of Agriculture 2006.

## 8.0 Agriculture Sector Challenges and Opportunities

Key informant interviews were conducted with seven agriculture sector stakeholders from the Algoma - Manitoulin region in December 2009. One objective of the interviews was to discuss findings from the 2006 Census of Agriculture and to identify any major changes/trends in the local agriculture sector since the 2006 Census (see section 5.15). A second objective of the interviews was to discuss challenges and opportunities related to the development of the agriculture sector. Stakeholders participating in the interviews included representatives from a variety of sectors including dairy, beef, sheep/lamb, alpaca, and field crops. The OFA Member Service Representative for the region was also interviewed.

The key findings from the consultation with agri-sector stakeholders are presented below.

Agri-related Business

It was suggested that little has changed with respect to the number of farm equipment dealers and service providers in the region since the previous agri-economic impact study was completed. It was noted that local equipment parts dealers are holding smaller inventories but over the years an efficient courier system has evolved that allows for next day delivery of parts. Agri-sector stakeholders also noted that farmers are increasingly using the internet to shop for more competitive deals in other areas. The use of the internet has also saved farmers the time and cost of having to travel to other areas like southern Ontario to identify and purchase the equipment they need.

It was reported that some farmers are increasingly relying on custom farming services to handle their field work (e.g. crop seeding, spraying, harvesting).

With respect to the dairy sector it was reported that farms in the region usually have to source their dairy equipment from outside the area (e.g. eastern Ontario). It was also noted that dairy feed and supplements are often sourced from southern Ontario. It was reported that some farmers try to arrange for bagged feed to be shipped back into the region on trucks that are taking cattle or grain out of the region.

In general, it appears that the beef and dairy sectors are able to access adequate veterinarian services in the region. However, agri-sector stakeholders noted that since the BSE crisis in 2003 and the continuation of depressed beef prices, producers are increasingly doing their own research on herd health issues over the internet or through their networks to try and resolve issues on their own to reduce their veterinarian costs.

With respect to food processing, it was reported that livestock producers in the region generally have access to local dairy and meat processing facilities. Northern Quality Meats, the producer owned abattoir in Desbarats, processes beef, pigs, and sheep and recently added a line for processing chicken. Efforts are also underway to reestablish an

abattoir on Manitoulin Island. With respect to dairy processing, Farquhar Dairy in Espanola receives milk from producers in Manitoulin and Algoma Districts.

While Farm Credit Corporation is generally viewed as a good source of long term financing, the value of commercial banks is typically linked to short term credit access. Beef producers also emphasized the importance of the Feeder Finance Cooperative Program for accessing financing for purchasing feeder cattle.

As noted above, farmers in the region are increasingly using the internet as a resource to improve business practices and reduce costs. Although it was reported that high speed internet problems are being resolved in many areas of northern Ontario, there is not an equivalent standard of internet connectivity across the region which could be limiting the ability of some farmers to make full use of the resource.

Challenges and Opportunities

Agri-sector stakeholders identified a number of challenges and opportunities for agriculture in the region.

One of the key challenges, which is applicable to agriculture in general regardless of the region of Ontario, is the issue of extreme market volatility in commodity prices as well as production costs. In response to the combination of low commodity prices and increasing production costs farmers in the region are cutting back on their farm input and maintenance expenditures. Some farmers are reducing their fertilizer inputs which could impact long term soil productivity in the region if prolonged. Stakeholders emphasized the need to for a safety net that will better help farms overcome this dual threat to farm viability.

A significant number of farmers are approaching or have already reached their senior years and producers question where the next generation of farmers will come from and how they will cope with the high start up costs and low returns associated with agriculture. It was suggested that government incentive programs are needed to help young people enter into agriculture.

Agri-sector stakeholders identified the important role played by the Northern Ontario Heritage Fund Corporation (NOHFC) in previous years for making funds available for land improvement and farm facility expansion projects. Funding obtained through NOHFC for tile drainage projects was viewed as particularly valuable to the region and stakeholders reported that there is currently interest in tiling an additional 1,500 acres in the region if funding were available to help cover costs.

Agri-sector stakeholders reported that many areas of Algoma District could grow more grain crops as well as canola but the lack of local grain storage and drying facilities is a key constraint. Producers identified the mill expansion in Verner and the resulting growth in surrounding grain production as an example of how infrastructure can help to stimulate production.

Some agri-sector stakeholders view biomass crops as a potential new income for famers in the region. It was suggested that a pelletizer would need to be built in the region to process the raw-product and that pellets could be efficiently shipped south by water transport.

Some agri-sector stakeholders expressed concern about the amount of land coming under outside/foreign ownership which is creating the need for long term land lease arrangements to help ensure that farmland stays in production. One suggestion was for the implementation of a tax policy to promote long term land leases and penalties for not keeping agricultural lands in production.

There is growing involvement in value added farm activities in northern Ontario. A recent example is Penokean Hills Farms which consists of a group of farmers who raise cattle without the use of growth hormones or antibiotics and markets high-quality boxed frozen and fresh beef cuts. As noted by one agri-sector stakeholder, there is an opportunity to grow the existing alpaca sector in the region by marketing alpaca fibre as well as producing and marketing finished products. It was suggested that alpaca producers in northern Ontario are generally more focused on fibre production than producers elsewhere in the province and the sector could grow further with the establishment of a local processing mill. It was suggested that other producer cooperatives need to be established to help in the development of this and other value added activities. Agri-sector stakeholders noted that these efforts need to be networked with local food and agri-product initiatives in the region to facilitate market access.

Organizations and networks promoting local food options are active in Algoma, Manitoulin and Sudbury. However, some agri-sector stakeholders reported that more needs to be done to encourage and help more farmers connect with and utilize these networks.

## 9.0 Conclusions

The value of agricultural production in the Algoma - Manitoulin region is substantial. In 2005, farmers in the region reported a total of $34.4 million in gross farm receipts which represents about 19% of the total receipts for northern Ontario.

In terms of employment, the agriculture sector in the Algoma - Manitoulin region directly supports 620 on-farm jobs. A notable trend in the farm operator data is the increased time involved in off farm employment. Between 1995 and 2005, the proportion of Algoma - Manitoulin region farm operators working off the farm increased from 35% to 52%. The increase in off-farm employment activity in the region is consistent with the wider provincial trend. Producers often link the need for a second income to a combination of factors including stagnant or shrinking commodity prices and rising production costs. The increase in off-farm work is also having a negative effect on the amount of time that farm leaders are able to volunteer for organizations and activities that have traditionally helped to promote agriculture in the region.

It is important to emphasize that the decline in agriculture employment does not reflect trends in farm productivity. Agriculture in the Algoma - Manitoulin region continues to have competitive advantages and economic opportunities including a substantial farmland base that supports the growth of a variety of crops; lower land prices relative to land prices in southern Ontario, its isolation from the threat of contaminants from industrial farms; and its access to a regional market (northeastern Ontario).

The Algoma - Manitoulin region reported just over 292,000 acres of farmland from 642 farms in 2006. Historically, the region reported a much larger area of farmland. For example, in 1981, the Study Area reported just over 342,000 acres of farmland (113,791 acres in Algoma District, 204,199 acres in Manitoulin District, and 24,303 acres in Sables-Spanish Rivers).

With respect to crop production, the climate and soil conditions in the region allow for the production of a variety of field crops including barley, wheat, oats, corn, mixed grains, soybeans, canola and hay crops. Approximately 78,000 acres or 27% of the total farmland base in the region was used for crop production in 2006.

The Algoma - Manitoulin region features a variety of farm types and sizes. Major farm production activities in the region include beef production, hay production, dairy production, greenhouse, nursery and floriculture production, as well as a range of other animal production activities including sheep, goats, and horses. The average farm size in the region is 455 acres but there is considerable variation in farm sizes across the area. On average, farms in Manitoulin District are the largest at 690 acres while farms in Algoma District are the smallest at 286 acres.

The agri-related business community plays an important role in supporting agriculture in the Algoma - Manitoulin region. These businesses represent a variety of industry sectors including retail and wholesale trade, manufacturing, construction, transportation and business services. Agri-related businesses provide the support infrastructure for the agriculture sector and through their linkages to farm based activities, generate substantial economic benefits for the region.

A review of the findings from the 2002 agri-economic impact study for the Algoma - Manitoulin region in the context of more recent economic activity reveals that agriculture continues to make a significant contribution to the wider economy beyond the farm gate.

Allowing for a ±10% change in agri-related business activity since the 2002 study, we estimate that agriculture in the Algoma - Manitoulin region currently generates between $37 million and $45 million in indirect sales (agri-related business sales) and sustains between 218 and 266 indirect jobs. With respect to induced impacts, we estimate that agriculture in the Algoma - Manitoulin region sustains between 1,361 and 1,439 jobs in the public service sectors (i.e. health services, education services, public administration).

Overall, the total economic impact of agriculture in the Algoma - Manitoulin region amounts to between $72 million and $80 million in sales (direct and indirect) and between 2,200 and 2,325 jobs (direct, indirect and induced). The associated sales expenditure multiplier indicates that for every dollar generated in direct agricultural sales (farm gate sales), an additional $1.10 to $1.30 in sales related to agriculture is also generated in the wider economy. The associated employment multiplier indicates that for every job in the agriculture sector an additional 2 to 3 jobs are supported in the wider economy.

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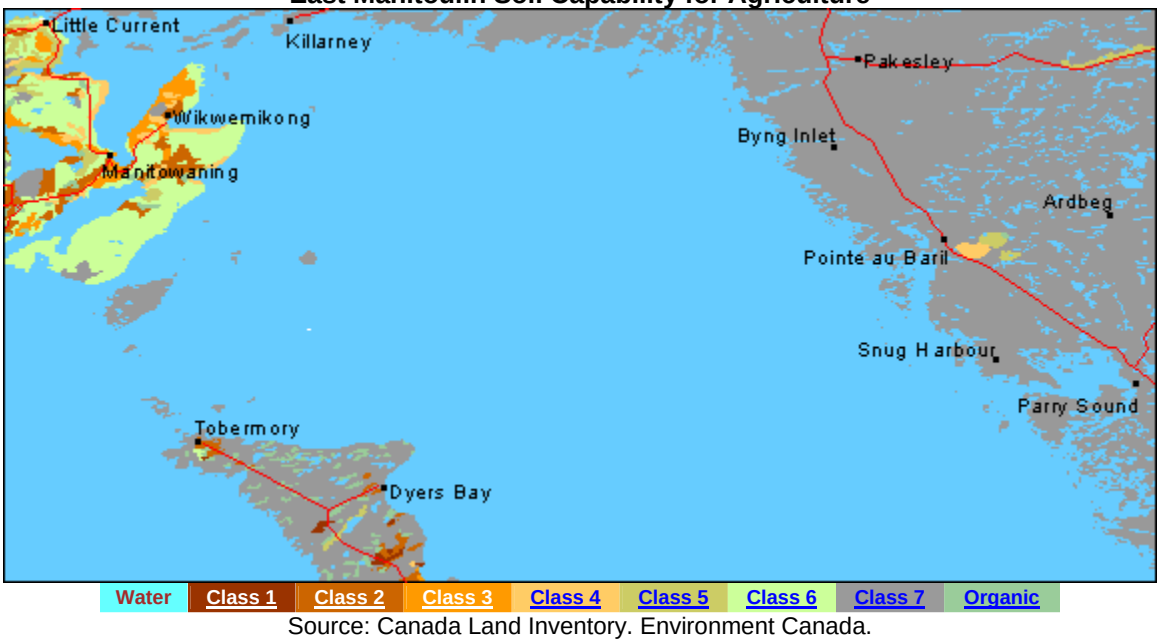
## Appendix A: Soil Capability for Agriculture in the Algoma - Manitoulin Study Area

The following land capability classes indicate the degree of limitation imposed by the soil in its use for mechanized agriculture.

| Class | Description |
|---|---|
| 1 | Soils in this class have no significant limitations in use for crops. |
| 2 | Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices. |
| 3 | Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices. |
| 4 | Soils in this class have severe limitations that restrict the range of crops or require special conservation practices. |
| 5 | Soils in this class have very severe limitations that restrict their capability in producing perennial forage crops, and improvement practices are feasible. |
| 6 | Soils in this class are capable only of producing perennial forage crops, and improvement practices are not feasible. |
| 7 | Soils in this class have no capacity for arable culture or permanent pasture. |
| 8 | Organic Soils (not placed in capability classes). |

Source: Canada Land Inventory. Environment Canada

**East Manitoulin Soil Capability for Agriculture**

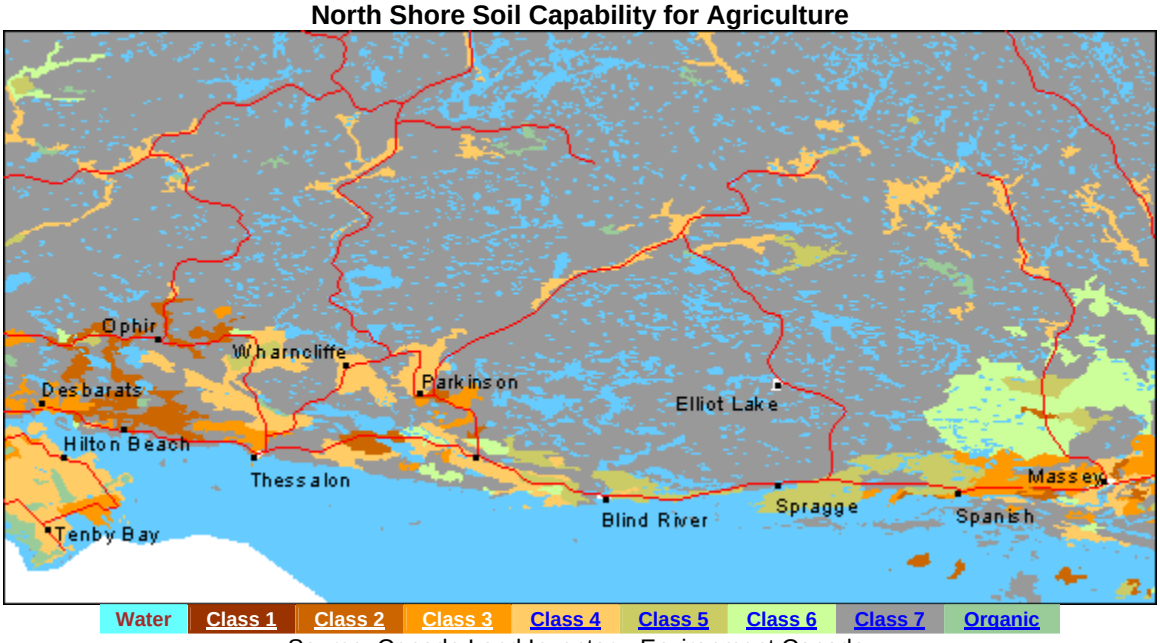



Source: Canada Land Inventory. Environment Canada.
http://geogratis.cgdi.gc.ca/CLI/frames.html

**West Manitoulin Soil Capability for Agriculture**

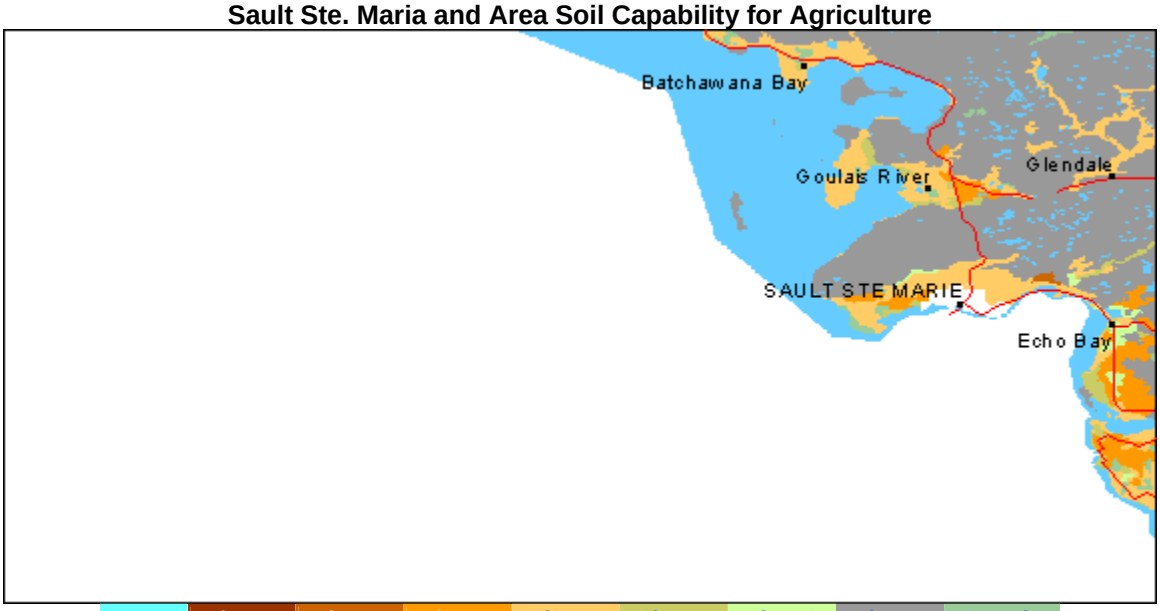

Source: Canada Land Inventory. Environment Canada.
http://geogratis.cgdi.gc.ca/CLI/frames.html

**North Shore Soil Capability for Agriculture**




Source: Canada Land Inventory. Environment Canada.
http://geogratis.cgdi.gc.ca/CLI/frames.html

**Sault Ste. Maria and Area Soil Capability for Agriculture**




Water | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 | Class 6 | Class 7 | Organic

Source: Canada Land Inventory. Environment Canada.
http://geogratis.cgdi.gc.ca/CLI/frames.html

**Appendix B: Greater Sudbury Food Charter - Final Version, June 2004**

***Given that*** access to safe, affordable, nutritious food is a basic human right of individuals and communities, and connects us to our families, our cultures, and our traditions;
***And that*** community food security is a comprehensive approach that includes all components of the food system, from producers to consumers, and promotes regional food self-reliance;
***And that*** having a food secure community is the foundation of population health, social justice, community-based economic development, and a sustainable environment;

*Therefore, the Food Security Network of the Sudbury and Manitoulin Districts, including The City of Greater Sudbury, the Social Planning Council of Sudbury, and the Sudbury & District Health Unit, will work towards the development and implementation of a community food security mandate that supports research, policies, and programs that will endorse:*

*1) Population Health and Wellness*:

- Individual and household food security as a determinant of health;
- Adequate income, employment, housing, and transportation policies that ensure food accessibility and availability to all citizens; and
- Nutritional education and healthy food choices in schools, businesses and public places.

*2) Community Development*:

- An annual community food security report card;
- Food self-reliance through community-based food programs, such as community gardens, fresh food box programs and collective kitchens;
- Multi-cultural food festivals and cultural events;
- An emergency food preparedness plan; and
- The involvement of the community in developing food security solutions.

*3) Investment in the Regional Food System*:

- A regionally-based and community-driven food system;
- The viability of agricultural and rural communities;
- The development of regional value-added agricultural production, food processing and distribution systems; and
- The promotion of regional food products at farmer's markets, farm-gate sales, and local food outlets.

*4) The Development of a Sustainable Food System:*

- Public and institutional education on the interdependence between the food system and a sustainable environment;
- Scientifically proven best management agricultural practices and regional crop varieties;
- The development and implementation of renewable technologies in the expansion of the regional food system;
- The reduction of persistent toxic chemicals that can accumulate within the food chain;
- Sustainable waste management practices; and
- Support for initiatives that minimize the loss of bio-diversity, resource depletion, and climate change, and that raise the awareness of global environmental issues.

Source: Sudbury and District Health Unit.
www.sdhu.com/content/search/doc.asp?doc=1161&q=food+security&l=&lang=0

## Appendix C: Economic Impact Analysis - An Overview

Economic impact is generally a measure of the impact of a sector or a project on all sectors of the economy. 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 the several standard methodologies of regional analysis: the economic base analysis and input-output analysis (Faas, 1980, p. 4).

### 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 basic sector includes industries that ultimately export their product out of the region. The non-basic sector is the economic activity with 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 needs of the economy (Bendavid-Val, 1991, p. 77). Economic 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: "What is the overall gain in employment or income in the region associated with each gain in export sales?" (Bendavid-Val, 1991, p. 78).

This question is answered through the economic base ratio indicator and the base multiplier indicator (Bendavid-Val, 1991, p. 780). 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 of basic and non-basic employment combined equaling total employment (Bendavid-Val, 1991, 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 the basic sector of agriculture.

### 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 inputs from all other sectors to a specific sector. What makes the IO model so useful is its comprehensiveness, which disaggregates the economy into individual sectors (Josling, 1996, 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 where it 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 IO 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. 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. The Open Model allows the estimation of only the direct and indirect effects of a sector. The Closed Model 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; expenditures on food, services and other household expenses would not be included (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). As this study aims to measure all of the effects of agriculture on the Study Area economy, it is based on the Closed Model approach.

There are several problems associated with the IO model. The first is that it is time-specific; it takes a snapshot of the economy at a specific 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 IO model does not adjust for the changing nature of the economy. A second problem of the IO model is the cost and time needed for the construction of the tables associated with this analysis. For this reason, the analysis for this study has been carried out using a survey-based "input-output-like" approach.

**Multipliers**

Given the previous discussion of economic base analysis and input-output 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, what these models do is measure the multiplier effects that result from a change in the economic system. In basic terms, multiplier effects are the relationship between direct jobs produced by a project or sector and indirect and/or induced jobs caused by the direct jobs, 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 agricultural production) on another variable (for example, the value of non-agricultural 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).