

# Cochrane District Agricultural Economic Impact Study

October 2009



Food Security Research Network  
*in and for the North*



NORTHWESTERN ONTARIO  
DEVELOPMENT NETWORK

Cochrane District  
Federation of Agriculture

# **Cochrane District Agricultural Economic Impact Study**

October 2009

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Cochrane District Cattlemen's Association  
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Town of Val Rita  
Township of Moonbeam  
Township of Fauquier / Strickland  
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***This report is dedicated to Andy Dodds, Hedley Blackburn and Dave Hackett who have been longstanding members of the Cochrane District Soil and Crop Improvement Association since its inauguration in 1939.***

***The report is also dedicated to Harry Kolomeitz who along with Dave Hackett contributed to the development of the potato sector in Cochrane District.***

## **Executive Summary**

The purpose of this report is to provide a profile of agriculture in Cochrane District and an estimate of the economic impact of agriculture on the wider economy. The study grows out of the need to clearly document and define the role of agriculture in the local economy and plan for the future. The report includes a description of the physical and human resources in the region, an overview of agricultural production in the District, and an estimate of the direct, indirect and induced economic impacts of agriculture in the regional economy.

The research in this report relies on data from the Population and Agricultural Census (1996-2006), a survey of agricultural-related businesses in northern Ontario, and a focus group with primary producers and other agri-sector stakeholders from Cochrane District. The study was completed as part of a larger collaborative partnership between stakeholder groups in Cochrane District, Thunder Bay District, Rainy River District, and Kenora District. Separate reports were prepared for each of the four Districts. The focus of this report is on Cochrane District.

The value of agricultural production in Cochrane District is substantial. In 2005, farmers in the District reported a total of \$11.2 million in gross farm receipts. With respect to jobs, the local agriculture sector directly supports about 155 on-farm jobs. It is important to note that the above job figure does not include all part-time positions. Indeed, the employment profile of the agriculture sector is undergoing a transformation as part of a long term provincial trend with farmers increasingly working more hours off the farm to supplement their farm income. Between 1995 and 2005, the proportion of Cochrane District farmers working off the farm increased from 39% to 56%. 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 Cochrane District 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, and its access to a regional market (northeastern Ontario).

Cochrane District reported over 75,000 acres of farmland from 184 farms in 2006. With respect to crop production, the climate and soil conditions in the District allow for the production of a variety of field crops including barley, wheat, oats, mixed grains, and hay crops. Approximately 28,437 acres or 38% of the total farmland base in the District was used for crop production in 2006. Historically, Cochrane District reported as much as 187,000 acres of farmland in 1961 of which 54,161 acres were reported in crop

production which indicates the District has significant potential for expanding agricultural production. Based on projections from climate change models, the growing season in the District is expected to gradually increase over the next 100 years which will result in further crop production opportunities for the region.

Cochrane District features a variety of farm types and sizes. Major farm production activities in the District include hay/fodder production, beef production, dairy production, and a range of other animal production activities including horses, sheep, goats, bison, and deer/elk. The average farm size in Cochrane District is 409 acres but there is considerable variation in farm sizes across the area with farms in the Timmins area tending to be smaller (e.g. less than 200 acres). Additionally, farms in the Timmins area have become progressively smaller in size over the last 10 years while farms in other parts of the District have become progressively larger.

Agriculture in Cochrane District has been greatly advanced and continues to benefit from research and other activities conducted by a number of northern Ontario institutions and organizations including the Kapuskasing Experimental Farm, the New Liskeard Agricultural Research Station, and various farmer led organizations.

Another stakeholder group that plays an important role in supporting agriculture is the agri-related business community. 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 regional analysis of agri-related business activity in the combined areas of Thunder Bay District, Kenora District, Rainy River District and Cochrane District reveals that agriculture is making a significant contribution to the wider economy beyond the farm gate. Collectively, the 840 farms and the 270 agri-related businesses in this Study Area generate approximately \$140 million in agri-related sales consisting of \$62.1 million in direct sales (farm receipts) and \$77.9 million in indirect sales (agri-related business sales). The associated sales expenditure multiplier indicates that for every dollar of farm income there is an additional \$1.30 in business sales activity in the wider economy.

Additionally, the agriculture sector in this Study Area supports between 2,520 and 3,465 jobs consisting of 1,120 direct jobs (on farm jobs), 455 indirect jobs (agri-related business jobs) and between 945 and 1,890 induced jobs (jobs in government sectors). The associated employment multiplier indicates that for every job in the agriculture sector an additional 1.3 to 2.1 jobs are supported in the wider economy. The high range job multiplier is more closely linked to the Thunder Bay region given the concentration of dairy and other agriculture sectors in the region and the larger agri-related business base.

## **Recommendations**

As outlined above, agriculture in Cochrane District and northwestern Ontario as a whole produces significant economic and social benefits. The agriculture sector also features a number of opportunities for further growth and development.

A common concern expressed by agri-sector stakeholders in northern Ontario is that government policies and programs are typically based on models of agri-food production that feature larger scale operations and southern Ontario market realities. More focus is needed on developing policies and programs that address the needs/challenges of farms operating in the more localized economies that characterize northern Ontario. For example, beef sector support programs in the Province of Quebec are often cited by local producers as important factors in maintaining a strong beef sector.

Northern Ontario also has unique crop production challenges linked to soil and climate conditions and previous government land improvement programs were an important factor in the development of more productive farms in the District. Furthermore, historical data indicates that Cochrane District has a considerable farmland base that could potentially be brought back into production.

- 1. It is recommended that government officials work closely with agri-related stakeholders in northern Ontario to better understand local production and market realities in order to facilitate the development of more relevant and accessible policies and programs for the region. This includes the reintroduction of farmland improvement programs.***
- 2. It is recommended the local/provincial government officials work closely with their Quebec counterparts to examine options for adapting and introducing relevant agricultural support programs from the Quebec context to northern Ontario.***

Value added farm activities are increasing in northern Ontario. A recent example is the proposed abattoir in the Town of Cochrane which is about to proceed with an environmental study on the site lands. This is coinciding with growing consumer interest in locally produced foods and local efforts to promote greater awareness and involvement in production activities aimed at the local market. Agri-sector stakeholders in Cochrane District see the potential growth for a variety of local value added products including specialty meat products and fresh vegetables. Value added farm activities are also capturing the attention of younger people who are considering entering agriculture. However, the infrastructure needed to support some of these activities is expensive (e.g. processing and cold storage facilities) and the government regulations that surround the establishment and operation of some facilities can be costly and complex.

- 3. It is recommended that producers and other interest groups examine the establishment of cooperatives as a way to facilitate the development of infrastructure such as processing and storage facilities.***

Producers in northern Ontario and Quebec continue to benefit from the research activities being undertaken at the Kapuskasing Experimental Farm. However, in order to enhance the ability of the Experimental Farm to respond to the needs of producers, producers in the region would like to be more directly engaged in determining the type of research to be conducted at the Experimental Farm.

While agri-sector stakeholders recognize that there are agri-biomass development opportunities in the District, development of this sector needs to be undertaken in a manner that is sensitive to current and potential food production activities in the region.

Although there appears to be some recent growth in organic production in northeastern Ontario including Cochrane District, the amount and type of production taking place is not well understood. Additionally, the non-timber forest products sector is seen as an emerging sector in northern Ontario but there is very limited information on the type and quantity of products being harvested and the way in which the raw resources are being used in further product development.<sup>1</sup>

- 4. It is recommended that funding for the Kapuskasing Experimental Farm be continued to support the further growth and development of the agriculture industry in Cochrane District and northeastern Ontario. It is also recommended that the Experimental Farm engage more directly with producer organizations in the region when determining research priorities.***
- 5. It is recommended that existing and potential agri-food production activities in the region be given careful consideration when pursuing the development of agri-biomass development opportunities in the District.***
- 6. It is recommended that local stakeholders work in partnership to develop a more detailed profile of the organic and non-timber forest products sectors to better understand the type, amount and value of production associated with these activities. It is also recommended that local stakeholders work in partnership to identify and implement strategies to facilitate the growth of these sectors.***

Agri-sector stakeholders including producers, research institutions, and agri-related businesses believe it is important to work on the development of a local/community food system. This entails the creation of a formal food production and marketing strategy and action plan with the engagement of local government, food producers, processors, retailers, and consumer groups. It would also include the development of infrastructure related elements such as local storage capacity for food products, an efficient

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<sup>1</sup> 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).

transportation and distribution system/network, and local food product promotions with the goal of enhancing the accessibility of locally produced foods in all food outlets including alternative food outlets (e.g. farm retail outlets, farmers' markets, food basket programs, etc.).

- 7. It is recommended that a funded position (e.g. local food development official/liaison/planner) be established to work with agri-related stakeholders and coordinate the development and implementation of a formal local food system action plan with goals and objectives.**
- 8. It is recommended that producers and other agri-sector stakeholders seek out opportunities to work collaboratively with First Nation communities to promote the further development of local food production initiatives and continued enhancement of consumer access to local foods.**

Many businesses in northern Ontario recognize the importance of agriculture to their bottom line and the well being of the wider economy. The agriculture sector is valued for being a relatively stable sector and farmers are viewed as good customers who support local businesses. However, agri-related businesses also recognize that farmers sometimes purchase their farm materials from outside the region (e.g. southern Ontario, Quebec). Farm operators believe there is greater need for dialogue with agri-related businesses to ensure that local business owners are aware of the needs and resource limitations faced by farmers. Farm operators also feel that there are opportunities for local businesses to enhance their marketing to the farming community by ensuring that product/service advertising and promotions are sufficiently differentiated for the agriculture sector. This is especially relevant for any internet based promotions as farmers are increasingly using the internet to search for products and services.

- 9. It is recommended that the Cochrane Federation of Agriculture conduct information sessions with local Chambers of Commerce and relevant industry sector organizations to increase awareness of the significant business that agriculture conducts and the opportunities for businesses to capture more of this activity.**

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- Northwestern Ontario Development Network
- Cochrane District Federation of Agriculture
- Cochrane District Cattlemen's Association
- Cochrane District Dairy Producers
- Cochrane Agricultural Society
- Matheson Agricultural Society
- Town of Cochrane
- Town of Val Rita
- Township of Moonbeam
- Township of Fauquier / Strickland
- Township of Black River Matheson
- Food Security Research Network
- Ontario Federation of Agriculture

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HCA also acknowledges the support provided by Frank Scarcello, the Agricultural Study Coordinator for NODN.

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 Cochrane District.

Harry Cummings and Associates  
*October 2009*

*The front cover photo was generously provided by Aileen Hessels.*



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## 1.0 Introduction

Agriculture is an important industry in northern 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).

The purpose of this report is to provide a detailed examination of the role played by agriculture in the economy of Cochrane District (in northeastern Ontario) and the three Districts that make up northwestern Ontario (Thunder Bay, Kenora, and Rainy River). This includes an assessment of the indirect economic impacts of agriculture in the region. In the past, many studies of this type have only focused on examining the conditions on the farm. By ignoring the size and importance of agriculture's economic linkages beyond the farm gate, the impact of agriculture was being undervalued. This study aims to set the record straight and present a more complete picture of the agricultural economy in northern Ontario.

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 first chapter of the report introduces the scope of the research and the collaborative approach used in completing the study.

Chapter 2 of the report presents a profile of population and employment indicators in northern Ontario with a special focus on Cochrane District. 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 Study Area 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 Cochrane District 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 Cochrane District 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 examines the direct, indirect and induced impacts of agriculture on the economy of the Study Area. This chapter includes an analysis of sales and employment data collected from 150 agri-related businesses in the Study Area representing a variety of different industry groups including retail, wholesale, construction, and manufacturing.

Chapter 8 examines the challenges and opportunities associated with the agriculture sector in Cochrane District.

Chapter 9 presents the study conclusions and recommendations.

## 1.1 Background to the Study Methodology

The study focuses on the dollars and jobs created by agriculture in Cochrane District (located in northeastern Ontario) and the three Districts that make up northwestern Ontario (Thunder Bay, Kenora and Rainy River).<sup>2</sup>

The methodology uses an input-output like analysis as a tool for assessing the total economic impact of agriculture in the Study Area. 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), a survey of agricultural-related businesses located in the Study Area, focus groups with primary producers and community stakeholders, and discussions/interviews with other local citizens knowledgeable of the area. Additional details on the methods used in the survey of agri-related businesses and the focus groups with primary producers are provided in Chapter 7 and 8.<sup>3</sup>

Note: Individual reports were prepared for each of the four Districts in the Study Area which provide profiles of the general economy and the agriculture sector in each District. The findings from the survey of agri-related businesses cover all four Districts combined and provide a regional perspective on the impact of agriculture beyond the farm gate.

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<sup>2</sup> Agricultural economic impact studies were completed in all Districts in northeastern Ontario between 2001 and 2004 with the exception of Cochrane. As part of the overall research agenda for this study, the previous studies in northeastern Ontario were updated with more recent census data and consultations with primary producers while the study in northwestern Ontario including Cochrane District involved a more in-depth, first of its kind analysis of the economic impacts of agriculture on the regional economy.

<sup>3</sup> The research strategy for this 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<sup>2</sup> which constitutes about 87% of the land area of Ontario (Map 1.1).<sup>4</sup> The three westernmost districts in northern Ontario (Thunder Bay, Kenora and Rainy River) constitute northwestern Ontario and the remaining districts constitute northeastern 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 focuses on the agricultural regions in the three northwestern Ontario Districts (Thunder Bay, Kenora and Rainy River) and Cochrane District in northeastern Ontario.

Map 1.2 provides an overview of the Districts in northeastern Ontario including select communities and major highways. Map 1.3 provides an overview of the Districts in northwestern Ontario.

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<sup>4</sup> 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.



### ***Physical Infrastructure in Cochrane District (Northeastern Ontario)***

Cochrane District is served by several highways in the region (Map1.2). Highway 11 connects communities across the southern part Cochrane District from the Township of Black River-Matheson in the east to Hearst in the west and beyond into Thunder Bay District.<sup>5</sup> Highway 11 extends south of Black River-Matheson where it connects with the City of Temiskaming Shores and the City of North Bay and runs further south into southern Ontario where it connects with the other major urban centres including the City of Barrie.<sup>6</sup>

Highway 101 extends west of Black River-Matheson and connects with the City of Timmins and carries on west to the Town of Chapleau and connects with the Town of Wawa at Highway 17.<sup>7</sup> Another principal highway in the region is Highway 655 which extends north from Timmins where it connects with Highway 11 at the community of Driftwood.

The region is also served by one of the largest airports in northern Ontario located in the City of Timmins. The Timmins airport serves the air commuter and cargo needs of the surrounding market area which is comprised of 160,000 people.<sup>8</sup>

The Northern Ontario Railway offers services between Kapuskasing and Toronto and transports both freight and passengers (includes a bus connection from Kapuskasing to Cochrane). The line connects to the Algoma Central Railroad in Hearst, and to both the Canadian National and Canadian Pacific Railroads in North Bay. The Algoma Central Railroad transports passengers and freight between Sault Ste. Marie and Hearst and connects with the Ontario Northland line in Hearst and with Canadian National and Canadian Pacific Railroads to the south.

### ***Physical Infrastructure in Northwestern Ontario***

Northwestern Ontario is served by major highways including Highway 11 and 17 – both are part of the Trans Canada Highway (see Map 1.3). Highway 11 runs east west across the southern boundary of northwestern Ontario and links the City of Thunder Bay to the Town of Fort Frances and the Town of Rainy River.<sup>9</sup>

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<sup>5</sup> The overland distance between the Township of Black River-Matheson and the Town of Hearst is approximately 290km.

<sup>6</sup> The overland distance between the Township of Black River-Matheson and the City of North Bay is approximately 295km

<sup>7</sup> The overland distance between the Township of Black River-Matheson and the City of Timmins is approximately 68km while the overland distance between the Township of Black River-Matheson and the Town of Wawa is approximately 400km

<sup>8</sup> The Timmins Victor M. Power Airport has two runways – the main runway is 6,000 feet and secondary runway is 4,900 feet. (City of Timmins. <http://portal.timmins.ca/portal/en/timmins/residents/airport>).

<sup>9</sup> The overland distance between the City of Thunder Bay and the Town of Fort Frances is approximately 350km while the distance between the City of Thunder Bay and the Town of Rainy River is approximately 440km.

Highway 17 also runs east west and links the City of Thunder Bay to the City of Dryden and the City of Kenora.<sup>10</sup> Highway 17 continues westward beyond the City of Kenora and reaches the City of Winnipeg, Manitoba (about 200km).

Two other principal highways in the region are Highway 71 which runs north south and links the City of Kenora to the Town of Fort Frances, and Highway 72 which links the Town of Sioux Lookout to Highway 11.

Northwestern Ontario has three border crossings to the United States at Fort Frances, Rainy River, and south of Thunder Bay along Highway 61.<sup>11</sup> The City of Thunder Bay is a transportation hub for Canada with substantial rail, marine and air transport infrastructure.

The Thunder Bay International Airport is one of the busiest airports in Ontario with over 645,000 scheduled passengers flowing through the terminal in 2008.<sup>12</sup> The City of Thunder Bay has the largest outbound port on the St. Lawrence Seaway System. The port facilities handle a wide variety of cargoes and are served by both Canadian National and Canadian Pacific Railways, as well as major Canadian trucking companies. More than 400 ships visit the port each year and cargoes such as grain, coal, potash, forest products, and manufactured goods are shipped throughout the world.<sup>13</sup>

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<sup>10</sup> The overland distance between the City of Thunder Bay and the City of Dryden is approximately 360km while the distance between the City of Thunder Bay and the City of Kenora is approximately 490km.

<sup>11</sup> The City of Duluth, Minnesota is about 305km from the City of Thunder Bay.

<sup>12</sup> The airfield features a significant general aviation component, with a number of on-site corporate, charter, maintenance, training and speciality aviation services companies. Some 100 fixed and rotary-wing aircraft are based at the airport, although this number rises considerably during the busy summer season, especially in support of those forestry, mining and tourism interests who are based throughout the north-western Ontario hinterland (Economic Impact Study of the Thunder Bay International Airport. RP Erickson & Associates. 2008).

<sup>13</sup> The Port of Thunder Bay is located at the head of the Great Lakes/St. Lawrence Seaway System which extends 3,700 kilometres into the heart of the North American continent. The Port of Thunder Bay and the Seaway System operate 24 hours a day, seven days a week, from the end of March through to late-December – the season is extended as weather permits. (Thunder Bay Port Authority. <http://www.portofthunderbay.com/article/port-overview-113.asp>)

Map 1.2: Communities and Major Highways in Northeastern Ontario



Map 1.3: Communities and Major Highways in Northwestern Ontario



## **2.0 Socio-Economic Profile of Cochrane District**

### **2.1 Introduction**

This section of the report provides a socio-economic profile of Cochrane District. 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 Cochrane District 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 District's contribution to these economies.

Northern Ontario includes the following Districts: Kenora, Rainy River, Thunder Bay, Cochrane, Algoma, Manitoulin, Temiskaming, Nipissing, Sudbury, and the Greater Sudbury Division.

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 population of Cochrane District declined from 93,240 to 82,503 or 12%. As shown in Table 2.1, the rate of population decline in Cochrane District was more than double the rate experienced by northern Ontario as whole which experienced a 5% decline during the same period. In comparison the province as a whole experienced a 13% increase in population between 1996 and 2006.

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%
<b>Cochrane District *</b>	<b>93,240</b>	<b>85,247</b>	<b>82,503</b>	<b>-12%</b>
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%
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).<sup>14</sup>

## 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, retail trade was the largest employment sector in Cochrane District with 5,320 jobs or 13% of the total jobs in the District (Table 2.2). The other top ranking sectors in the District in terms of total jobs include health care and social assistance with 4,840

<sup>14</sup> 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).

jobs (12%), manufacturing with 4,075 jobs (10%), educational services with 3,125 jobs (8%), mining and oil/gas extraction with 2,830 jobs (7%), and accommodation and food services with 2,685 jobs (7%). Agriculture directly employed a total of 155 people (i.e. on farm jobs) in Cochrane District in 2006.

The employment profile for Cochrane District is fairly comparable to northern Ontario as whole with respect to the distribution of the workforce across the 20 industry sectors.

The top ranking sectors at the provincial level in terms of total jobs in 2006 include manufacturing (14% of the total jobs), retail trade (11%), health care and social assistance services (9%), professional, scientific and technical services (7%), educational services (7%), and accommodation and food services (6%). At the provincial level agriculture accounts for almost 2% of the total jobs in Ontario.

With respect to the change in job numbers between 2001 and 2006, the total number of jobs in Cochrane District declined slightly from 40,675 jobs in 2001 to 40,535 in 2006 (Table 2.3). The industry sectors that experienced the greatest job growth in the District between 2001 and 2006 include administrative and support services (+590 jobs or 50% growth), health care and social services (+300 jobs or 7% growth), public administration (+185 jobs, 9%), transportation and warehousing (150 jobs, 6%), and utilities (+100 jobs, 19%).

The industry sectors that experienced the greatest job losses in Cochrane District between 2001 and 2006 include manufacturing (-725 jobs or 15% decline), accommodation and food services (-255 jobs, 9%), and information and cultural industries (-170 jobs, 25%),

During the 2001-2006 period the number of jobs in the agriculture sector in Cochrane District declined substantially from 305 to 150 jobs or 49%. In comparison, the number of jobs in agriculture at the provincial level declined from 110,475 jobs in 2001 to 101,210 jobs in 2006 or 8% (Statistics Canada, 2001 and 2006).

It is important to emphasize that the decline in agriculture employment does not reflect trends in farm productivity. Farm productivity has increased in Cochrane District and 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.<sup>15</sup>

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<sup>15</sup> 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.

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).

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).<sup>16</sup>

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<sup>16</sup> 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 <sup>a</sup>	Ontario		Northern Ontario Region		Cochrane District	
	# jobs	%	# jobs	%	# jobs	%
All industries	6,473,735	100%	366,020	100%	40,535	100%
Agriculture	101,210	1.6%	3,070	0.8%	155	0.4%
Fishing, hunting and trapping	1,355	0.02%	375	0.1%	15	0.04%
Forestry and logging	11,780	0.2%	6,955	1.9%	1,460	3.6%
Mining and oil and gas extraction	25,445	0.4%	13,395	3.7%	2,830	7.0%
Utilities	50,215	0.8%	3,510	1.0%	630	1.6%
Construction	384,780	5.9%	22,275	6.1%	2,615	6.5%
Manufacturing	899,670	13.9%	32,525	8.9%	4,075	10.1%
Wholesale trade	307,465	4.7%	9,575	2.6%	980	2.4%
Retail trade	720,235	11.1%	46,135	12.6%	5,320	13.1%
Transportation and warehousing	307,475	4.7%	20,765	5.7%	2,490	6.1%
Information and cultural industries	172,800	2.7%	5,335	1.5%	515	1.3%
Finance and insurance	316,170	4.9%	8,355	2.3%	840	2.1%
Real estate and rental and leasing	126,440	2.0%	4,795	1.3%	405	1.0%
Professional, scientific and technical services	471,620	7.3%	12,715	3.5%	1,070	2.6%
Management of companies and enterprises	8,440	0.1%	105	0.03%	10	0.02%
Administrative and support, waste management and remediation services	314,005	4.9%	16,410	4.5%	1,765	4.4%
Educational services	433,485	6.7%	30,030	8.2%	3,125	7.7%
Health care and social assistance	611,745	9.4%	47,650	13.0%	4,840	11.9%
Arts, entertainment and recreation	140,830	2.2%	6,945	1.9%	435	1.1%
Accommodation and food services	414,975	6.4%	28,830	7.9%	2,685	6.6%
Other services (except public administration)	303,510	4.7%	18,135	5.0%	1,930	4.8%
Public administration	350,070	5.4%	28,185	7.7%	2,350	5.8%

<sup>a</sup>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 Cochrane District, 2001-2006**

NAICS Industrial Sector	2001		2006		Change 2001 to 2006	
	# jobs	%	# jobs	%	Change in jobs by #	Change in jobs by %
All industries	40,675	100%	40,535	100%	-140	-0.3%
Agriculture	305	0.7%	155	0.4%	-150	-49.2%
Fishing, hunting and trapping	25	0.1%	15	0.04%	-10	-40.0%
Forestry and logging	1,435	3.5%	1,460	3.6%	25	1.7%
Mining and oil and gas extraction	2,910	7.2%	2,830	7.0%	-80	-2.7%
Utilities	530	1.3%	630	1.6%	100	18.9%
Construction	2,640	6.5%	2,615	6.5%	-25	-0.9%
Manufacturing	4,800	11.8%	4,075	10.1%	-725	-15.1%
Wholesale trade	1,020	2.5%	980	2.4%	-40	-3.9%
Retail trade	5,410	13.3%	5,320	13.1%	-90	-1.7%
Transportation and warehousing	2,340	5.8%	2,490	6.1%	150	6.4%
Information and cultural industries	685	1.7%	515	1.3%	-170	-24.8%
Finance and insurance	920	2.3%	840	2.1%	-80	-8.7%
Real estate and rental and leasing	400	1.0%	405	1.0%	5	1.3%
Professional, scientific and technical services	1,125	2.8%	1,070	2.6%	-55	-4.9%
Management of companies and enterprises	10	0.02%	10	0.02%	0	---
Administrative and support, waste management and remediation services	1,175	2.9%	1,765	4.4%	590	50.2%
Educational services	3,050	7.5%	3,125	7.7%	75	2.5%
Health care and social assistance	4,540	11.2%	4,840	11.9%	300	6.6%
Arts, entertainment and recreation	370	0.9%	435	1.1%	65	17.6%
Accommodation and food services	2,940	7.2%	2,685	6.6%	-255	-8.7%
Other services (except public administration)	1,880	4.6%	1,930	4.8%	50	2.7%
Public administration	2,165	5.3%	2,350	5.8%	185	8.5%

Source: Statistics Canada, 2001, 2006.

## Educational Attainment

In 2005, approximately 10% of the population (25 to 64 years of age) in Cochrane District had a university certificate or degree while a further 25% had a college or other non-university certificate/diploma. Approximately 24% of the population reported that their highest educational attainment was a high school certificate while 24% of the population reported that they did not have a certificate/diploma/degree (Table 2.4).

A slightly lower proportion of the population in Cochrane District has a university certificate or degree compared to northern Ontario as whole (10% 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		Cochrane District	
	#	%	#	%	#	%
Total population	6,638,330	100%	400,705	100%	45,070	100%
No certificate, diploma or degree	899,530	14%	76,170	19%	10,850	24%
Certificate, diploma or degree	5,738,800	86%	324,525	81%	34,220	76%
High school certificate or equivalent	1,660,665	25%	101,075	25%	10,745	24%
Apprenticeship or trades certificate or Diploma	581,125	9%	51,405	13%	6,630	15%
College, CEGEP or other non-university certificate or diploma	1,461,630	22%	102,635	26%	11,265	25%
University certificate, diploma or degree	2,035,370	31%	69,395	17%	5,580	12%
University certificate or diploma below bachelor level	309,945	5%	11,300	3%	965	2%
University certificate or degree	1,725,425	26%	58,095	14%	4,615	10%
Bachelor's degree	1,057,200	16%	36,230	9%	3,090	7%
University certificate or diploma above bachelor level	209,345	3%	10,615	3%	820	2%
Degree in medicine, dentistry, veterinary medicine or optometry	47,815	1%	1,650	0.4%	135	0.3%
Master's degree	351,925	5%	8,000	2%	545	1%
Earned doctorate	59,140	1%	1,560	0.4%	15	0.0%

Source: Statistics Canada, 2006.

## Household Income

Table 2.5 shows the distribution of households by household income categories for Cochrane District, 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, Cochrane District had a comparable percentage of households with incomes under \$20,000 compared to northern Ontario as a whole (17%), but a higher percentage compared to Ontario (13%). Although the proportion of households with incomes between \$50,000 and \$100,000 in the District (35) was fairly comparable with both northern Ontario (34%) and Ontario (34%), the District had a lower percentage of households with incomes of \$100,000 or more compared to the province (18% vs. 24%). In 2005, the average household income in Cochrane District was \$63,642 which is about \$14,000 lower than the provincial average (\$77,967).

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

Household income in 2005 of private households	Ontario		Northern Ontario Region		Cochrane District	
	# households	%	# households	%	# households	%
All households	4,555,025	100%	305,465	100%	33,340	100%
Under \$10,000	198,235	4%	14,175	5%	1,365	4%
\$10,000 to \$19,999	398,830	9%	37,580	12%	4,415	13%
\$20,000 to \$29,999	408,130	9%	32,785	11%	3,540	11%
\$30,000 to \$39,999	447,475	10%	34,085	11%	3,240	10%
\$40,000 to \$49,999	419,525	9%	30,870	10%	3,075	9%
\$50,000 to \$59,999	385,555	8%	25,835	8%	2,630	8%
\$60,000 to \$69,999	356,990	8%	23,800	8%	2,600	8%
\$70,000 to \$79,999	324,835	7%	20,695	7%	2,555	8%
\$80,000 to \$89,999	282,910	6%	18,440	6%	2,165	6%
\$90,000 to \$99,999	238,720	5%	14,585	5%	1,745	5%
\$100,000 and over	1,093,810	24%	52,590	17%	6,010	18%
Median household income	\$60,455		NA		53,691	
Average household income	\$77,967		NA		63,642	

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).<sup>17</sup>

The Canadian Shield also features small areas of clay deposits which are suitable for raising crops and grazing. The 'Clay Belt' in northeastern Ontario refers to a tract of fertile soil covering parts of Cochrane and Temiskaming District.

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 constraints 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.

In Cochrane District these soils are largely located in and around the communities that stretch along the claybelt corridor including Cochrane, Timmins, Iroquois Falls, Black River-Matheson, Kapuskasing, and Hearst.

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 crops.

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<sup>17</sup> 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).

**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 Cochrane District (including the agricultural production areas around the City of Timmins, the Town of Cochrane, the Town of Iroquois Falls, the Township of Black River-Matheson, and communities along Highway 11 between Kapuskasing and Hearst) 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. The climate of northeastern Ontario is also influenced by the cold, maritime climate of Hudson Bay and James Bay which affects areas as far south as Kirkland Lake (Baldwin, Desloges and Band, 2000).

In the southern part of Cochrane District (e.g. Timmins, Iroquois Falls, Cochrane, Kapuskasing) average summer temperatures during 1971-2000 were about 17°C while average winter temperatures were about -18°C (Environment Canada, 2008).

At present, the last frost in spring occurs in late June in northern Ontario while the first frost generally occurs in September which results in fewer than 100 frost free days (Qian et al., 2005). In the Kapuskasing area of Cochrane District the average earliest planting date is June 1 while the average season ending date is September 5 (Brown and Bootsma, 1997).

The following table shows the climate normals for several locations in the southern part of Cochrane District. 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 Cochrane District (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)
Cochrane <sup>a</sup>	January	-18.4	2.6	-12.1	-24.7	0.7	71.6	72.3
	July	16.8	1.1	24	9.5	90.1	0	90.1
	Year	0.6	3.5	6.9	-5.7	583.2	296.8	880
Iroquois Falls <sup>b</sup>	January	-17.9	2.9	-11	-24.7	2.7	46.7	49.4
	July	17.2	1.1	24.1	10.2	93.3	0	93.3
	Year	NA	NA	NA	NA	561.2	214.8	776
Timmins <sup>c</sup>	January	-17.5	3	-11	-23.9	2.9	61.7	53.9
	July	17.4	1.1	24.2	10.5	91.5	0	91.5
	Year	1.3	1	7.5	-4.9	558.1	313.4	831.3
Kapuskasing A <sup>d</sup>	January	-18.7	2.9	-12.4	-24.9	0.7	60.8	54.6
	July	17.2	1.1	23.9	10.5	100.5	0	100.5
	Year	0.7	1	6.9	-5.4	544.6	313	831.8

<sup>a</sup> Cochrane: Latitude = 49° 4' N; Longitude = 81° 2' W; Elevation = 275 m.

<sup>b</sup> Iroquois Falls: Latitude = 48° 45' N; Longitude = 80° 40' W; Elevation = 259 m.

<sup>c</sup> Timmins: Latitude = 48° 34' N; Longitude = 81° 22' W; Elevation = 295 m.

<sup>d</sup> Kapuskasing A: Latitude = 49° 24' N; Longitude = 82° 28' W; Elevation = 226 m.

NA: not available.

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.<sup>18</sup>

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.

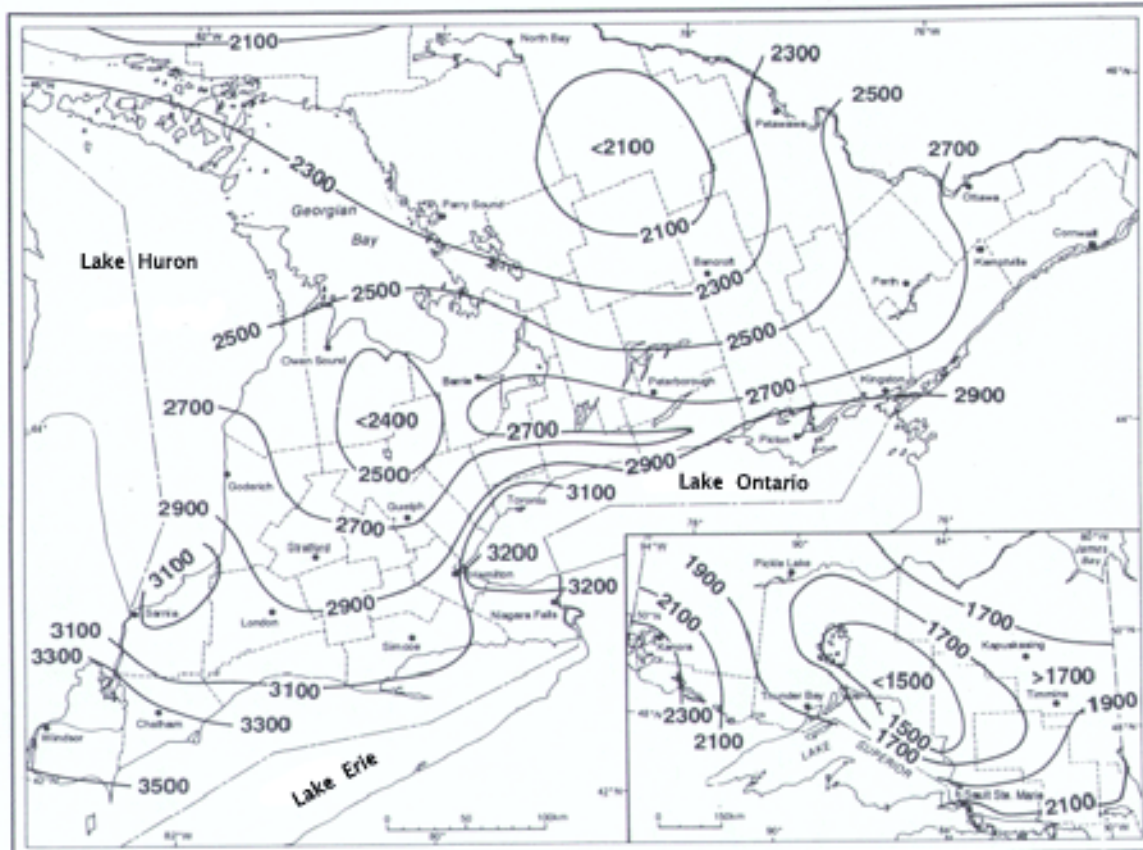
<sup>18</sup> Daily CHU are calculated from daily minimum and maximum air temperatures drawn from separate calculations taken during the day and night. The daytime relationship uses 10°C (50°F) as the base temperature and 30°C (86°F) as the optimum, because warm-season crops do not develop when daytime 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.

This makes it impossible to estimate the CHU rating closer than 50 heat units for any location.

The accumulated CHU available for crops such as corn and soybeans across Ontario are shown in Map 3.1. The Study Area is shown in the insert of Map 3.1 in the lower right corner. The area of agriculture production in Cochrane District has a CHU rating of about 1700. For example, the average accumulated CHU for the Kapuskasing area amount to 1720 (Brown and Bootsma, 1997). This CHU rating allows for a variety of crop production in the southern part of Cochrane District including wheat, oats, barley, corn, potatoes, alfalfa, and other hay fodder crops.

Additional details on crop production activity in the region 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](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).<sup>19</sup> 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°C by 2011.<sup>20</sup> The same scenario predicts that average summer temperatures in the southern part of northeastern Ontario will increase by 3 to 4°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 by 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°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 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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<sup>19</sup> '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).

<sup>20</sup> 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<sub>2</sub> 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 long-term 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 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 although lands suffering from excessive moisture would continue to be economically unsuitable for the small grains (p.167).
- Opportunities for hay production are expected to be smaller than the effects on other field crops in northern Ontario (p.168).

However, with the introduction of new crop varieties over the last 20 years and improved soil management practices there has already been a substantial increase in production for certain crops in northern Ontario. For example, in the last 10 years alone (1996 to 2006) the area in corn production in northern Ontario increased from 2,261 acres to 5,932 acres while the area in soybean production increased from 94 acres to 4,385 acres; the area in wheat production increased from 5,416 acres to 21,264 acres; and the area in alfalfa production increased from 66,908 acres to 103,232 acres (Statistics Canada, 1996 and 2006).

#### **4.0 Agricultural Community Resources in Northeastern Ontario**

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 region. The scope of the analysis purposely focuses on Cochrane District and other areas of northern Ontario to illustrate the range of the different organizations and initiatives across northeastern Ontario that are advancing the overall growth and sustainability of agriculture in the region. The regional perspective also illustrates the capacity of different areas and organizations of northern Ontario to work collaboratively to pool resources and leverage funding to facilitate research, as was the case with this study.

##### ***Federation of Agriculture***

Each District in northern Ontario including Cochrane District is represented by a 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. 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).

##### ***Research Groups***

Agricultural related research is important to making farms more profitable and making farming practices more sustainable. A number of organizations in northeastern Ontario are undertaking a variety of research initiatives and a brief overview of some of these activities is provided below.

## Kapuskasing Experimental Farm

The Kapuskasing Experimental Farm is a federal government agriculture research centre which employs about 14 people. The Farm has conducted research on forage production, forage conservation, forage utilization, cereal crop production, and horticultural crop production. The Farm has also developed technologies for enhancing the cost efficiency of beef production in northern regions.

Some examples of the type of research conducted at the Kapuskasing Experimental Farm include a study on the growth performance, cost of production and carcass quality of forage fed beef versus grain fed beef with or without the use of growth promotants (Berthiaume, Mandell, Faucitano and Lafrenière. 2006) and a study on the feed quality of round bale silage and forage particle size and the growth performance of beef cow-calves (Berthiaume, Lafrenière, and Roy. 1999).

## New Liskeard Agricultural Research Station

The New Liskeard Agricultural Research Station (NLARS) in neighbouring Temiskaming District 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.

## Green Energy Initiatives

- The Bioenergy Plantation Project in northern Ontario involves establishing four woody crop plantations on underutilized agricultural land by using multiple strains of fast-growing willow and poplar. The trees (biomass) will be harvested every few years for bioenergy and bioproducts. The project will serve to generate income for landowners and create green jobs within communities while helping to meet provincial targets for renewable energy production. The Bioenergy Plantation Project is being coordinated by the Upper Lakes Environmental Research Network (ULERN) in collaboration with a number of organizations including Natural Resources Canada, Ontario Ministry of Natural Resources, Tembec Inc., Villeneuve Construction, La Maison Verte, St. Marys Paper Corporation, Thunder Bay Ventures, and the communities of Hearst and Sault Ste. Marie.
- The Northern Claybelt Agri Network (NCBAN) is involved in exploring agri and agri-bio based development opportunities in and around the communities along Highway 11 (between the Township of Black River-Matheson and the Town of Hearst) and Highway 101 (between the Township of Black River-Matheson and the City of Timmins). NCBAN has completed a comprehensive inventory of the land and soil types in the region and is currently examining market and business opportunities for the development of abandoned and underutilized agricultural

lands including biomass production opportunities for energy generation (Commerce Management Group. 2009).

### Agri-food Processing Initiatives

Over the past several years there has been ongoing discussion on the prospects for establishing a small abattoir in Cochrane District. In early 2009, Ontario North East Meats (ONE Meats) completed a feasibility study and business plan for the construction and operation of an abattoir in the District. The facility has a projected cost of \$2.5 million and will initially employ 6 to 8 full time employees with the potential to employ up to 15 people after 3 years. The new facility will be built to provincial standards and have the capacity to process up to 8 animals a week and eventually up to 15 animals a week (Cochrane Times-Post. October 22, 2009). The facility will also have a retail store. In October 2009, ONE Meats received support from the Town of Cochrane council for the project and approval to proceed with the environmental study on the site lands for the facility (Cochrane Times-Post. October 30, 2009). The facility will be subject to government regulations including the Ministry of the Environment's clean air guidelines.

## **5.0 Profile of the Agriculture Sector in Cochrane District**

### **5.1 Introduction**

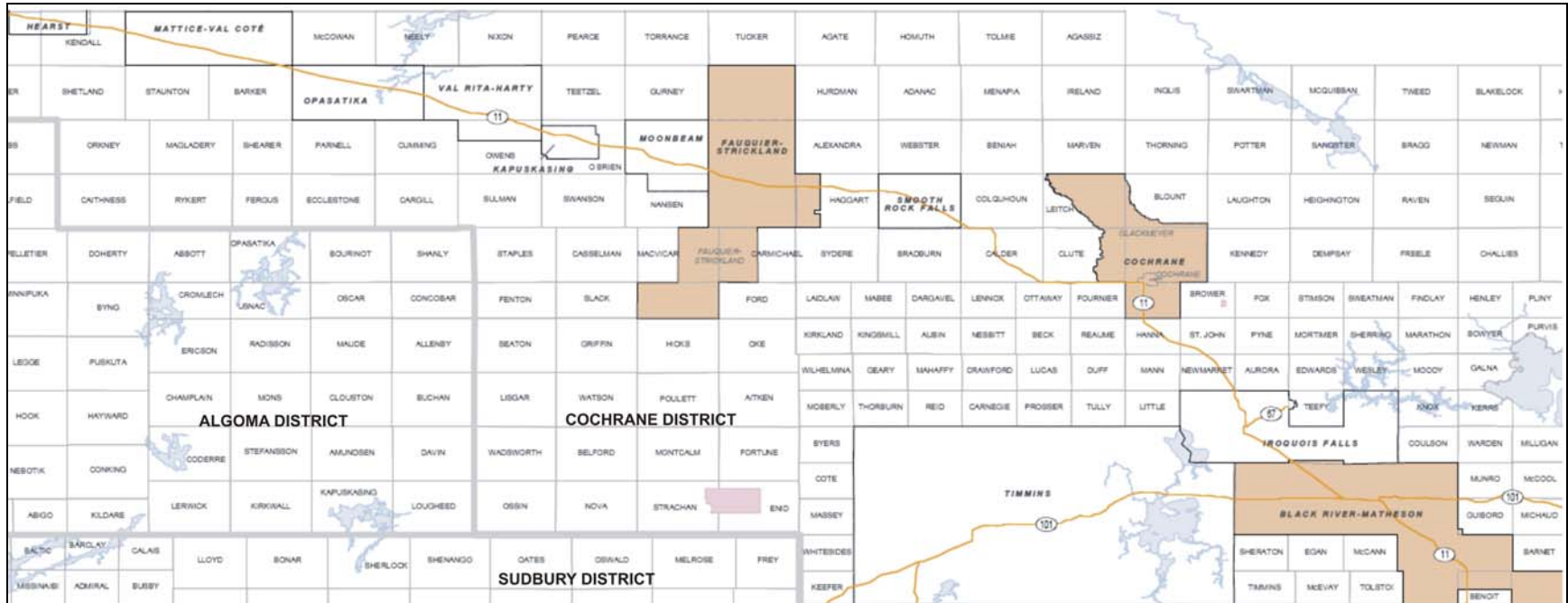
This section presents a profile of the Agriculture Sector in Cochrane District. Agricultural activity in Cochrane District is largely located in and around the following communities: Black River-Matheson, Iroquois Falls, Timmins, Cochrane, and Kapuskasing.

Data for the analysis were drawn from the Census of Agriculture, which is conducted every five years. Statistics Canada normally reports on agricultural data for Census Subdivision areas which generally overlap municipal boundaries. However, in the case of Cochrane District there are too few farms in the individual townships to protect the confidentiality of the farm operations and Statistics Canada has combined all of the data under two geographic designations: Timmins and Cochrane/Unincorporated.

The Cochrane/Unincorporated designation includes incorporated municipalities such as Black River-Matheson, Iroquois Falls, Cochrane, Smooth Rock Falls, Fauquier-Strickland, Moonbeam, Kapuskasing, Val Rita-Harty, Opatatika, Mattice Val Côté, and Hearst as well as unincorporated municipalities such as Clute, Kennedy, Brower, and Fox.

Map 5.1 shows the municipalities that stretch between Black River-Matheson and Hearst.

Map 5.1: Select Municipalities in Cochrane District



Source: Ministry of Municipal Affairs and Housing, 2009.

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 Cochrane District 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 Cochrane District's contribution to these economies.<sup>21</sup>

The Census data was reviewed with agri-sector stakeholders in Cochrane District in April 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.

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

In 2006, Cochrane District reported a total of 184 farms, down from 228 farms in 1996 (Table 5.1).<sup>22</sup> This represents an 19% decline across the District which is slightly higher than the rate of loss experienced across the northern Ontario region and Ontario as a whole (15%). In 2006, 7% of all farms in northern Ontario were located in Cochrane District.

**Table 5.1: Number of Farms in Cochrane District, 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%
Cochrane District	228	204	184	-44	-19%
Timmins	36	20	31	-5	-14%
Cochrane / Unincorporated	192	184	153	-39	-20%

Source: Statistics Canada, 1996, 2001, 2006.

Cochrane District farms reported a total of 75,236 acres of workable and non-workable (e.g. woodlands, wetlands, natural pastureland) farmland in 2006 (Table 5.2).<sup>23</sup> This represents approximately 7% of the total farmland reported in northern Ontario in 2006. Between 1996 and 2006, the area of farmland reported in Cochrane District declined by approximately 7,100 acres. Historically, Cochrane District reported a much larger area

<sup>21</sup> The Northern Ontario Agricultural Region includes the following Districts: Nipissing, Sudbury, Manitoulin, Temiskaming, Cochrane, Greater Sudbury Division, Algoma, Thunder Bay, Rainy River and Kenora.

<sup>22</sup> 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).

<sup>23</sup> 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.



of farmland with 187,166 acres reported from 900 farms in 1961 and 113,154 acres of farmland from 326 farms in 1981.

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 Cochrane District increased from 361 acres to 409 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 Cochrane District there is considerable variation in average farm size. On average, farms in Timmins in 2006 were less than half the acreage compared to farms in other parts of the District (197 acres vs. 452 acres). Additionally, farms in Timmins have become progressively smaller in size over the last 10 years while farms in other parts of the District have become progressively larger.

**Table 5.2: Total Land Area, Workable<sup>a</sup> and Non-workable<sup>b</sup>, Reported by Farms in Cochrane District, 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
Cochrane District	228	82,333	361	204	76,872	377	184	75,236	409
Timmins	36	8,117	225	20	4,729	236	31	6,120	197
Cochrane / Unincorporated	192	74,216	387	184	72,143	392	153	69,116	452

<sup>a</sup> Workable land includes all arable or cleared lands including area in hay, crops, summerfallow, and tame or seeded pasture land.

<sup>b</sup> 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 22% or 16,854 acres of the total farmland area reported by farmers in Cochrane District is leased or rented (Table 5.3). This is lower than the provincial average of 28% and the northern Ontario average of 26%. Between 1996 and 2006 the proportion of farmland reported as rented in the District increased slightly from 21% to 22%.

Within Cochrane District, farms in Timmins in 2006 reported a slightly higher proportion of rented farmland compared to the other parts of the District (25% vs. 22%).

**Table 5.3: Land Tenure in Cochrane District, 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%
Cochrane District	64,811	79%	17,522	21%	58,382	78%	16,854	22%
Timmins	6,509	80%	1,608	20%	4,603	75%	1,517	25%
Cochrane / Unincorporated	58,302	79%	15,914	21%	53,779	78%	15,337	22%

Source: Statistics Canada, 1996, 2006.

### 5.3 Farmland Use

The largest single use of farmland in Cochrane District is crop production. In 2006, 28,437 acres or 38% of the total farmland base was used for crop production (Table 5.4). Cochrane District has a comparable percentage of its farmland base in crop production compared to northern Ontario as a whole (37%) but a smaller percentage compared to the province (68%). Historically, Cochrane District reported a larger area in crop production in 1961 at 54,161 acres.

Between 1996 and 2006, the area reported in crop production in Cochrane District increased by about 1,000 acres or 4%. During the same period the area reported in crop production in northern Ontario and Ontario increased by 8% and 3% respectively.

After crop production, 'other land use' was reported as the next largest farmland use in Cochrane District at 25,549 acres or 34% of the total farmland area.<sup>24</sup>

<sup>24</sup> Other land use includes land used for Christmas tree production, farm woodlots, wetlands, land occupied by farm buildings/yards etc. (Statistics Canada, 2006).

**Table 5.4: Farmland Use in Cochrane District, Northern Ontario and Ontario, 1996-2006 (acres)**

	Total area of farms (acres)	Land in crops	Summer-fallow <sup>a</sup>	Tame or seeded pasture <sup>b</sup>	Natural land for pasture <sup>c</sup>	All other land <sup>d</sup>
<b>1996</b>						
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
Cochrane District	82,333	27,436	317	7,014	15,324	32,242
Timmins	8,117	3,057	NA	1,008	1,986	NA
Cochrane / Unincorporated	74,216	24,379	NA	6,006	13,248	NA
<b>2001</b>						
Ontario	13,507,357	9,035,915	35,175	773,650	1,314,335	2,348,282
Northern Ontario	1,012,026	377,687	2,513	94,481	225,179	312,166
Cochrane District	76,872	29,172	202	7,352	14,785	25,361
Timmins	4,729	2,648	NA	360	796	NA
Cochrane / Unincorporated	72,143	26,524	NA	6,992	13,989	NA
<b>2006</b>						
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
Cochrane District	75,236	28,437	98	7,184	13,968	25,549
Timmins	6,120	3,481	NA	NA	426	1,965
Cochrane / Unincorporated	69,116	24,956	NA	NA	13,542	23,684

<sup>a</sup> 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. Includes chemfallow, tillage, and/or a combination of chemical and tillage weed control on the same land.

<sup>b</sup> 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.

<sup>c</sup> 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 (forest land and bushy areas used for grazing, not land cultivated for crops or with dense forest), etc.

<sup>d</sup> 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, 2001, 2006.

## 5.4 Farm Types

Cochrane District features a variety of different farm types. In 2006, a total of 93 farms or 51% of all farms in Cochrane District were primarily engaged in producing hay/fodder crops while 42 farms (23%) were primarily engaged in beef production, 7 farms (4%) were primarily engaged in dairy production, and 21 farms (11%) were primarily involved in raising other types of animals (e.g. horses, goats, rabbits, etc.). Additional details are provided in Table 5.5.

Between 2001 and 2006, the number of beef cattle farms in Cochrane District declined from 62 to 42, which represents a decline of 32%. During the same period the province as a whole experienced a 13% decline in beef cattle farms.

Between 2001 and 2006, the number of dairy farms in Cochrane District declined from 9 farms to 7 farms, which represents a decline of 22%. During the same period the province as a whole experienced a 23% decline in dairy farms.

Cochrane District also reported a total of 21 farms involved in other farm animal production in 2006 (up 11% from 19 farms in 2001). This includes animals such as horses, bison, deer, elk, llamas, alpacas, wild boars, goats, rabbits, bees, etc. Additional details on the inventory of farm animals/poultry in Cochrane District are provided in section 5.5.

With respect to field crops, the number of oilseed/grain crop farms in Cochrane District declined from 3 farms to 1 farm between 2001 and 2006 while other types of field crop farms (e.g. hay, fodder crops) increased from 60 to 93 farms. Additional details on the amount and type of crop production occurring in Cochrane District are provided in section 5.6.

The number of farms in Cochrane District involved in greenhouse, nursery, floriculture production declined from 12 farms in 2001 to 9 farms in 2006. Additional details on the amount and type of greenhouse, nursery, floriculture production occurring in the District are provided in section 5.8 and 5.9.

**Table 5.5: Number of Farms by Farm Type for Cochrane District, Northern Ontario and Ontario, 2001-2006  
(Farms reporting gross farm receipts of \$2,500 or more)<sup>a</sup>**

	Total farms	Dairy cattle	Beef cattle	Hog and pig	Poultry and egg <sup>b</sup>	Sheep and goat	Other animal production <sup>c</sup>	Oilseed and grain	Fruit	Greenhouse, nursery, floriculture	Other crops <sup>d</sup>	Vegetable
<b>2001</b>												
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
Cochrane District	174	9	62	0	2	1	19	3	1	12	60	5
Timmins	19	2	2	0	1	0	4	0	0	3	7	0
Cochrane / Unincorporated	155	7	60	0	1	1	15	3	1	9	53	5
<b>2006</b>												
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
Cochrane District	184	7	42	1	1	1	21	1	2	9	93	6
Timmins	31	1	4	1	0	0	9	0	0	2	12	2
Cochrane / Unincorporated	153	6	38	0	1	1	12	1	2	7	81	4

<sup>a</sup> 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.

<sup>b</sup> Includes ostriches and emus.

<sup>c</sup> Includes horses, bison, deer, elk, llamas, alpacas, wild boars, rabbits, bees, etc.

<sup>d</sup> 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 no farms in Cochrane District that reported organic farming activity. By 2006 a total of 26 farms in Cochrane District reported that they produced organic products although none of these farms were producing products that were certified as organic.<sup>25</sup>

Additional details on organic production in Cochrane District are provided in Table 5.6.

**Table 5.6: Number of Farms Producing Organic Products in Cochrane District, 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
Cochrane District	26	0	0	26	12	6	17	1	2
Timmins	5	0	0	5	3	1	4	0	0
Cochrane / Unincorporated	21	0	0	21	9	5	13	1	2

Source: Statistics Canada, 2006.

<sup>25</sup> 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 aren't 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 Cochrane District 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 Cochrane District beef sector as an example, the LQ formula for 2006 appears as follows:

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

$$LQ = (42 / 184) \div (11,052 / 57,211) = 1.2$$

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 (1.2) indicates that Cochrane District is specialized in beef production. The LQ's for the other farm sectors are presented in Table 5.7. The LQ data indicates that Cochrane District is also specialized in producing hay crops (other crops, 3.3) and vegetable production (1.1). Based on comparisons with 2001 data, Cochrane District is becoming increasingly specialized in hay and other crop production.

**Table 5.7: Location Quotient for Farm Types for Cochrane District, 2001 and 2006**

Year	Dairy cattle	Beef cattle	Hog and pig	Poultry and egg <sup>b</sup>	Sheep and goat	Other animal prod. <sup>c</sup>	Oilseed and grain	Fruit	Green-house, nursery, floriculture	Other crops <sup>d</sup>	Vegetable
2001	0.4	1.5	0.0	0.4	0.3	1.1	0.1	0.2	1.6	3.0	1.1
2006	0.4	1.2	0.1	0.2	0.2	0.9	0.0	0.3	1.0	3.3	1.1

Source: Adapted from Statistics Canada, 2001, 2006.

## 5.5 Livestock and Animals

Cochrane District farms raise a number of different types of livestock. In 2006, farms in the District reported over 2,500 beef cows, over 290 dairy cows, 234 sheep/lambs, 210 horses/ponies, 138 goats, and an unspecified number of pigs and farm raised bison and deer/elk. The District also reported 1,515 hens/chickens and at least one bee colony in 2006 (Table 5.8a and 5.8b).<sup>26</sup>

Between 1996 and 2006 the total number of dairy cows, sheep and lambs, goats, hens and chickens, and bee colonies declined in Cochrane District while the total number of beef cows increased and the number of horses and ponies remained almost unchanged.

During the same period, there was an overall decline in the number of dairy cows, hens and chickens, and bee colonies in the northern Ontario region while the total number of beef cows, pigs, sheep/lambs, goats, horses/ponies, bison, deer/elk, and llama/alpaca increased.<sup>27</sup>

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<sup>26</sup> 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.

<sup>27</sup> 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 horses, racing horses, and other horses including draft horses (Suthey Holler Associates. May 2006).



**Table 5.8a: Inventory of Selected Farm Related Animals for Cochrane District, Northern Ontario and Ontario, 1996-2006**

	Hens and chickens		Dairy cows		Beef cows		Pigs		Sheep and lambs		Goats	
	# farms	# birds	# farms	# cows	# farms	# cows	# farms	# pigs	# farms	#sheep	# farms	# goats
<b>1996</b>												
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
Cochrane District	46	35,568	27	960	115	2,428	9	588	12	549	14	190
Timmins	13	NA	5	NA	11	NA	3	NA	2	NA	4	30
Cochrane / Unincorporated	33	1,250	22	732	114	1,864	6	70	10	449	10	31
<b>2006</b>												
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
Cochrane District	24	1,515	7	NA	91	NA	1	NA	9	234	6	138
Timmins	4	149	1	NA	7	NA	1	NA	0	0	3	NA
Cochrane / Unincorporated	20	1,366	6	291	84	2,544	0	0	9	234	3	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 Cochrane District, Northern Ontario and Ontario, 1996-2006**

	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
<b>1996</b>										
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
Cochrane District	53	212	0	0	0	0	2	NA	5	26
Timmins	10	64	0	0	0	0	0	0	0	0
Cochrane, / Unincorporated	43	148	0	0	0	0	2	NA	5	NA
<b>2006</b>										
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
Cochrane District	40	210	2	NA	1	NA	1	NA	1	NA
Timmins	13	96	0	0	0	0	0	0	0	0
Cochrane / Unincorporated	27	114	2	NA	1	NA	1	NA	1	NA

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

## **5.6 Field Crops**

Cochrane District produces a variety of field crops including barley, wheat, oats, and hay crops. In 2006, the largest grain crops grown in the District in terms of total acreage were barley (1,361 acres), oats (975 acres), and mixed grains (391 acres). The District also produced an unspecified acreage of wheat on 6 farms and grain corn on at least 1 farm in 2006 (Table 5.9a and 5.9b).

With respect to forage and hay crops, Cochrane District produced 5,106 acres of alfalfa/alfalfa mixtures and 20,018 acres of other hay crops in 2006. A total of 14 farms also reported growing potatoes on a total of 45 acres in 2006.

Between 1996 and 2006 the total acreage of oats, barley, and alfalfa/alfalfa mixtures increased in Cochrane District while the total acreage of mixed grains and other hay crops declined.

During the same period there was an overall decline in the acreage of barely, other hay crops, and potatoes in the northern Ontario region while the total acreage of wheat, oats, corn (for silage), alfalfa, and soybeans increased.

**Table 5.9a: Total Reported Acreage of Selected Field Crops for Cochrane District, Northern Ontario and Ontario, 1996-2006**

	Wheat		Oats		Barley		Mixed grains		Corn for Grain		Corn for Silage	
	# farms	# acres	# farms	# acres	# farms	# acres	# farms	# acres	# farms	# acres	# farms	# acres
<b>1996</b>												
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
Cochrane District	1	NA	51	951	25	1059	15	530	0	0	0	0
Timmins	0	0	1	NA	6	415	0	0	0	0	0	0
Cochrane / Unincorporated	1	NA	50	758	19	478	15	434	0	0	0	0
<b>2006</b>												
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
Cochrane District	6	NA	38	975	22	1,361	13	391	1	NA	0	0
Timmins	1	NA	5	80	5	282	1	NA	0	0	0	0
Cochrane / Unincorporated	5	60	33	895	17	1,079	12	NA	1	NA	0	0

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 Cochrane District, Northern Ontario and Ontario, 1996-2006**

	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
<b>1996</b>												
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
Cochrane District	40	2,447	163	21,910	2	NA	0	0	0	0	23	148
Timmins	2	NA	20	2,119	0	0	0	0	0	0	3	3
Cochrane / Unincorporated	38	1,952	143	19,791	2	NA	0	0	0	0	20	145
<b>2006</b>												
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
Cochrane District	51	5,106	124	20,018	2	NA	0	0	0	0	14	45
Timmins	10	740	17	2,164	0	0	0	0	0	0	2	NA
Cochrane / Unincorporated	41	4,366	107	17,854	2	NA	0	0	0	0	12	NA

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 Cochrane District produce fruit and vegetables. In 2006, only 1 farm reported that they produced apples, 1 farm produced strawberries and 3 farms produced raspberries. In general, the number of farms engaged in fruit or berry production Cochrane District in 2006 is down 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
<b>1996</b>												
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
Cochrane District	1	NA	1	NA	1	NA	8	18	9	15	0	0
<b>2006</b>												
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
Cochrane District	1	NA	0	0	0	0	1	NA	3	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.

Cochrane District farmers produced a large variety of vegetables in 2006 including sweet corn, tomatoes, cucumbers, green peas, cabbage, cauliflower, broccoli, carrots, beets, onions, pumpkins/squash, and asparagus. However, it appears the acreage of production for some vegetables is not very substantial. For example, the 2006 Census of Agriculture indicates that 4 farms in Cochrane District produced about an acre of lettuce. Additional details are provided in Table 5.11.

**Table 5.11: 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
<b>1996</b>																
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
Cochrane District	8	7	8	5	4	2	10	6	14	6	10	7	6	4	7	5
<b>2006</b>																
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
Cochrane District	4	NA	7	1	7	1	7	4	9	4	3	0	3	0	2	NA

	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
<b>1996</b>																
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
Cochrane District	18	7	12	9	17	7	6	3	7	3	3	3	9	4	2	NA
<b>2006</b>																
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
Cochrane District	8	2	5	3	8	2	3	1	4	1	5	NA	7	11	2	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 total number of farms involved in greenhouse production in Cochrane District declined from 16 to 8 farms. However, the corresponding area in greenhouse production actually increased from 411,356 square feet to 754,650 square feet or about 80% (Table 5.12). In 2006, Cochrane District accounted for 22% of the total area of greenhouse production in northern Ontario.

In 2006, approximately 3% of the greenhouse production area in Cochrane District was reported in floriculture (4 farms, 27,980 square feet). The production area of greenhouse vegetables and other greenhouse products is unspecified for Cochrane District in 2006.



**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
<b>1996</b>												
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
Cochrane District	16	411,678	16	411,356	6	45,662	9	10,394	3	355,300	0	0
<b>2006</b>												
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
Cochrane District	8	756,852	8	754,650	4	27,980	3	NA	5	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.

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

Between 1996 and 2006, the total number of farms in Cochrane District involved in nursery production increased from 1 to 2 farms (Table 5.13).<sup>28</sup> Additionally, 2 farms in Cochrane District were engaged in syrup production in 2006 compared to none in 1996. Only 1 farm was engaged in sod production in Cochrane District in 2006 compared to 3 in 2001. It is difficult to comment on the acreage/amount of production in Cochrane District due to the small number of farms and the policy of Statistics Canada to suppress data where there are too few farms to ensure confidentiality.

**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
<b>1996</b>								
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
Cochrane District	1	NA	3	NA	0	0	0	0
<b>2006</b>								
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
Cochrane District	2	NA	1	NA	2	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.

<sup>28</sup> 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

Cochrane District reported \$11.2 million in total gross farm receipts in 2005 compared to \$11.5 million in 1995 (Table 5.14). The total gross farm receipts for Cochrane District for 2005 represent 6% of the total for northern Ontario.

**Table 5.14: Total Gross Farm Receipts (Excluding Sales of Forest Products from Farms) for Cochrane District, 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
Cochrane District	228	\$11,452,481	204	\$9,644,420	184	\$11,195,641
Timmins	36	\$3,061,477	20	\$2,440,782	31	\$3,033,293
Cochrane / Unincorporated	192	\$8,390,704	184	\$7,203,638	153	\$8,162,348

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 Cochrane District are, on average, lower than other parts of northern Ontario and the provincial average. Farms in Cochrane District averaged \$60,846 in gross farm gate sales in 2005, compared to \$72,278 per farm in northern Ontario and \$180,770 per farm in Ontario. Within the District, farms in Timmins reported higher average gross farm receipts (\$97,848) than farms in other parts of northern Ontario.

**Table 5.15: Average Gross Farm Receipts per Farm in Cochrane District, 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
Cochrane District	228	\$11,452,481	\$50,230	184	\$11,195,641	\$60,846
Timmins	36	\$4,612,206	\$128,117	31	\$3,033,293	\$97,848
Cochrane / Unincorporated	192	\$8,390,704	\$43,702	153	\$8,162,348	\$53,349

Source: Statistics Canada, 1996, 2006.

Farm woodlots represent an important source of income for many farmers in northern Ontario. In 2005, farms in Cochrane District reported almost \$100,000 in sales of forest products (Table 5.16).

**Table 5.16: Sales of Forest Products from Farms for Cochrane District, 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
Cochrane District	14	\$81,722	20	\$131,978	10	\$99,571
Timmins	2	NA	2	NA	1	NAX
Cochrane / Unincorporated	12	\$40,731	18	NA	9	NA

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 Cochrane District 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 41% of the farms in Cochrane District 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 Cochrane District, Northern Ontario and Ontario by Receipts Category, 1995-2005**

	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	%
<b>1995</b>																
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%
Cochrane District	122	54%	54	24%	14	6%	13	6%	14	6%	7	3%	4	2%	228	100%
Timmins	19	54%	6	28%	2	4%	2	6%	3	3%	3	3%	1	1%	36	100%
Cochrane / Unincorporated	103	54%	48	25%	12	6%	11	6%	11	6%	4	2%	3	1%	192	100%
<b>2005</b>																
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%
Cochrane District	75	41%	41	22%	33	18%	15	8%	9	5%	8	4%	3	2%	184	100%
Timmins	11	35%	8	26%	7	23%	1	3%	1	3%	1	3%	2	7%	31	100%
Cochrane / Unincorporated	64	42%	33	22%	26	17%	14	9%	8	5%	7	5%	1	1%	153	100%

Source: Statistics Canada, 1996, 2006.

Cochrane District reported \$10.4 million in total farm operating expenses in 2005 (Table 5.18). Cochrane District's total farm expenses for 2005 represent 7% of the total for northern Ontario. Total expenses per farm in Cochrane District are, on average, lower than other parts of northern Ontario and the provincial average. Farms in Cochrane District averaged \$56,666 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 Cochrane District, 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
Cochrane District	228	\$10,414,765	\$45,679	184	\$10,426,510	\$56,666
Timmins	36	\$2,598,155	\$72,171	31	\$2,766,905	\$89,255
Cochrane / Unincorporated	192	\$5,834,199	\$40,712	153	\$7,659,605	\$50,063

Source: Statistics Canada, 1996, 2006.

In examining the distribution of farm operating expenses by expense category we find that 22% of total operating expenses (\$2.2 million) in Cochrane District were tied to wages and salaries in 2005 (Table 5.19). This is higher than the percentage for northern Ontario as a whole (16%) and Ontario (14%). Livestock expenses represent the next largest single expense category in the District at \$1.4 million (13% of total operating expenses) followed by crop expenses (12%), and fuel expenses (11%). Additional details on farm operating expenses are provided in Table 5.19.

**Table 5.19: Farm Operating Expenses by Expense Category for Cochrane District, Northern Ontario and Ontario, 1995-2005**

	Total farms	Total farm business operating expenses	Total wages and salaries <sup>a</sup>	Total crop expenses <sup>b</sup>	Total livestock expenses <sup>c</sup>	Electricity, telephone and all other telecommunication 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) <sup>d</sup>
<b>1995</b>										
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
Cochrane District	228	\$10,414,765	\$2,084,555	\$635,328	\$2,267,921	\$611,131	\$750,929	\$632,309	\$359,262	\$3,073,330
Timmins	36	\$2,598,155	\$567,292	\$130,193	\$559,893	\$125,743	\$117,558	\$179,530	\$98,607	\$695,540
Cochrane / Unincorporated	192	\$7,816,610	\$1,517,263	\$505,135	\$1,708,028	\$485,388	\$521,553	\$452,779	\$260,655	\$2,337,384
<b>2005</b>										
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
Cochrane District	184	\$10,426,510	\$2,256,147	\$1,233,720	\$1,374,477	\$497,200	\$1,168,401	\$757,235	\$312,890	\$2,826,440
Timmins	31	\$2,766,905	NA	NA	NA	\$91,579	\$222,622	\$96,511	\$110,075	\$556,723
Cochrane / Unincorporated	153	\$7,659,605	NA	NA	NA	\$405,621	\$945,779	\$660,724	\$202,815	\$2,193,596

<sup>a</sup> Wages includes wages and salaries paid to family members

<sup>b</sup> Crop expenses includes fertilizer and lime, seed and plant purchases, herbicides, pesticides, etc.

<sup>c</sup> Livestock expenses includes feed purchases (including feed purchases from other farmers), livestock and poultry purchases, veterinary services, etc.

<sup>d</sup> 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 Cochrane District amounted to \$769,131 or 3% of the total net farm revenue reported in northern Ontario. The average net revenue per farm in Cochrane District in 2005 was \$4,180. This is almost \$7,000 lower than the northern Ontario average (Table 5.20).

**Table 5.20: Total Net Farm Revenue and Net Revenue per Farm in Cochrane District, 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
<b>1995</b>					
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
Cochrane District	228	\$11,452,481	\$10,414,765	\$1,037,716	\$4,551
Timmins	36	\$3,061,477	\$2,598,155	\$463,322	\$12,870
Cochrane / Unincorporated	192	\$8,390,704	\$7,816,610	\$574,0941	\$2,990
<b>2005</b>					
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
Cochrane District	184	\$11,195,641	\$10,426,510	\$769,131	\$4,180
Timmins	31	\$3,033,293	\$2,766,905	\$266,387	\$8,593
Cochrane / Unincorporated	153	\$8,162,348	\$7,659,605	\$502,743	\$3,286

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 Cochrane District 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 District's total value added.

As shown in Table 5.21, the total value added component for agriculture in Cochrane District amounted to \$3.6 million in 2005. This translates into 32 cents of value added per dollar of gross farm receipts. The average value added component per farm associated with Cochrane District farms (\$19,717) is lower than the average for northern Ontario (\$26,619) and Ontario (\$63,631) farms.

**Table 5.21: Value Added Agriculture in Cochrane District, Northern Ontario and Ontario, 1995-2005**

	Total farms	Total gross farm receipts	Total farm operating expenses <sup>a</sup>	Total agriculture value added <sup>b</sup>	Value added per farm
<b>1995</b>					
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
Cochrane District	228	\$11,452,481	\$7,650,538	\$3,801,943	\$16,675
<b>2005</b>					
Ontario	57,211	\$10,342,031,229	\$6,764,726,042	\$3,577,305,187	\$62,528
Northern Ontario Region	2,479	\$179,177,281	\$114,314,592	\$64,862,689	\$26,165
Cochrane District	184	\$11,195,641	\$7,567,714	\$3,627,927	\$19,717

N/A denotes that too few farms have reported data to ensure confidentiality.

<sup>a</sup> Total farm operating expenses excluding wages, interest, rent and property taxes.

<sup>b</sup> 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, Cochrane District reported \$86 million in total farm capital, which represents about 7% of the northern Ontario total (Table 5.22).

The average farm capital value for farms in Cochrane District in 2005 was \$469,138 which is about \$40,000 less than the average for northern Ontario (\$509,793) and considerably less than the provincial average value of \$1.1 million.

**Table 5.22: Total Farm Capital for Cochrane District, Northern Ontario and Ontario, 1995-2005**

	Total farms	Total farm capital - Market value <sup>a</sup>	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
<b>1995</b>										
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
Cochrane District	228	\$70,683,313	\$310,015	31	74	73	18	24	4	4
Timmins	36	\$12,906,396	\$358,511	4	11	11	1	8	0	1
Cochrane / Unincorporated	192	\$57,776,917	\$300,921	27	63	62	17	16	4	3
<b>2005</b>										
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
Cochrane District	184	\$86,321,292	\$469,138	9	41	47	36	41	5	5
Timmins	31	\$12,993,098	\$419,132	2	7	6	4	11	0	1
Cochrane / Unincorporated	153	\$73,328,194	\$479,269	7	34	41	32	30	5	4

<sup>a</sup> 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, Cochrane District reported a total of 270 farm operators, down from 320 operators in 1996 (Table 5.23).<sup>29</sup> In 2006, 70% of all farm operators in the District were male and 30% 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 District increased from 25% to 30%.

Between 1996 and 2006, the average age of farm operators in Cochrane District increased from 50 years to 55 years. Farm operators in the northern Ontario region and Ontario as a whole are on average 2 years younger than farm operators in Cochrane 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	
<b>1996</b>							
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
Cochrane District	320	240	80	40	160	120	50
Timmins	55	40	15	0	30	25	52
Cochrane / Unincorporated	260	200	65	40	125	105	49
<b>2006</b>							
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
Cochrane District	270	190	85	15	115	140	55
Timmins	45	30	20	0	30	15	52
Cochrane / Unincorporated	225	155	70	10	85	130	56

Source: Statistics Canada, 1996, 2006.

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

<sup>29</sup> 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.

type farms account for 72% of all farms which is higher than the average for northern Ontario (63%) and the province (56%).

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

**Table 5.24: Farm Operating Arrangements for Cochrane District, Northern Ontario and Ontario, 1996-2006**

	Number of farms	Operating Arrangement					
		Sole proprietorship <sup>a</sup>	Partnership with no written agreement <sup>b</sup>	Partnership with a written agreement	Family corporation <sup>c</sup>	Non-family corporation <sup>d</sup>	Other (institution, community pasture, etc.)
<b>1996</b>							
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
Cochrane District	228	162	28	13	20	4	1
Timmins	36	25	3	4	4	0	0
Cochrane / Unincorporated	192	137	25	9	16	4	1
<b>2006</b>							
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
Cochrane District	184	132	32	7	7	5	1
Timmins	31	18	10	1	2	0	0
Cochrane / Unincorporated	153	114	22	6	5	5	1

<sup>a</sup> 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.

<sup>b</sup> 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. The partners may or may not own the land, buildings, machinery, etc.

<sup>c</sup> Family corporation: an agricultural corp. in which an individual or family owns the majority of the shares.

<sup>d</sup> 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, 150 of the 270 farm operators (56%) in Cochrane District reported working off the farm in 2005. This is comparable to the percentage reported for the northern Ontario region (54%) and slightly higher than the percentage for Ontario as a whole (50%). Between 1995 and 2005 the proportion of Cochrane District farm operators working off the farm increased from 39% to 56%. 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 Cochrane District, 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
<b>1995</b>								
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
Cochrane District	320	100	110	110	195	15	60	50
<b>2005</b>								
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
Cochrane District	270	80	85	105	120	30	60	60

Source: Statistics Canada, 1996, 2006.

#### 5.14 Cochrane District Compared to Other Northern Ontario Districts

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

**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) <sup>b</sup>	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
<b>Northern Ontario Districts</b>											
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	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
<b>Cochrane</b>	<b>184</b>	<b>270</b>	<b>55</b>	<b>75,236</b>	<b>28,437</b>	<b>38%</b>	<b>409</b>	<b>\$11,195,641</b>	<b>\$10,426,510</b>	<b>\$4,180</b>	<b>\$10</b>
Parry Sound <sup>a</sup>	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

<sup>a</sup> 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.

<sup>b</sup> 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

A group discussion and review of the 2006 Census data was conducted with agri-sector stakeholders from Cochrane District in April 2009. A total of 29 agri-sector stakeholders participated in the session which included representatives from a variety of sectors including beef, sheep, dairy, bison, hog, poultry sector, field crop, and greenhouse.

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

- Agri-sector stakeholders are not surprised to see the continuing population decline in the District and link the decline to ongoing outmigration of youth from the area (i.e. youth leaving for other employment opportunities or for further education).
- Agri-sector stakeholders reported that there has been substantial job growth in the mining sector in the District since 2006. However, they also reported that there have been job losses in the forestry/logging sector and forest product manufacturing sector since 2006. It was also suggested that further job losses have been experienced in the accommodation and food sector in conjunction with a slowdown in snowmobile activity, the cancelation of the bear hunt, tightening U.S. border regulations, and the rising value of the Canadian dollar.
- Agri-sector stakeholders reported that there has been a general drop off in beef production in the District since the 2006 Census. It was noted that at least 3 farms in the District have gone out of beef production since 2003. Agri-sector stakeholders link the decline in beef production to the ongoing fallout from the BSE crisis in 2003 and the high cost of farm inputs and low returns for farm products.
- Agri-sector stakeholders reported that at least one dairy farmer is no longer operating in the District since 2006. Farmers rely on dairy processors outside the District (e.g. Sudbury, Quebec) and there has not been a local dairy processor since the plant in Timmins closed about 15 years ago.
- Agri-sector stakeholders suggested that the number of horses in the region has likely increased since 2006 in conjunction with the growth of trail riding activity in the region.
- Bison farming has been in the District for a while now and it was suggested that this activity has picked up in the last 6 years in response to growing consumer interest.
- Although the number of farms primarily engaged in hay production increased between 2001 and 2006, agri-sector stakeholders noted that it can be challenging to make a decent return on this type of activity given the high cost of fertilizer. It was reported that at least one farm is producing about 700 acres of organic hay for bison.



- Although Census shows at least one farm producing corn in the District in 2006, agri-sector stakeholders suggested that this may have been a reporting error as there is no corn being grown in the area.
- Agri-sector stakeholders reported that the vegetables being produced in the District are being sold mainly through the farmers' market while the potatoes are being sold to a local grocer.
- Agri-sector stakeholders confirmed that there is floriculture activity in the area and that the products are marketed locally. However, it was noted that greenhouse production in the region is challenging given the energy costs for heating the facilities.
- Agri-sector stakeholders suggested that the loss of 4 dairy farms since 2001 has had a significant impact on total farm gates receipts in the District. It was noted that the loss of one dairy farm can pull as much as \$500,000 out of the local economy. It was also suggested that farm gate receipts in the local floriculture sector have recently dropped.
- Agri-sector stakeholders confirmed that the average age of farm operators in the District is continuing to increase. They also confirmed that the proportion of female farm operators in the District is increasing.

## 5.16 Summary of Agriculture Characteristics

Key characteristics of the agriculture sector in Cochrane District:

- The number of farms in Cochrane District declined from 204 to 184 between 2001 and 2006 which is consistent with an ongoing trend found in the large majority of Ontario counties/districts.<sup>30</sup>
- Since 1996, the average farm size in Cochrane District increased from 361 acres to 409 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 District (409 acres) is similar to the average for northern Ontario (412 acres) but larger than the provincial average (233 acres).
  - Within Cochrane District there is considerable variation in average farm size. Farms in Timmins in 2006 were less than half the acreage on average compared to farms in other parts of the District (197 acres vs. 452 acres). Additionally, farms in Timmins have become progressively smaller in size over the last 10 years while farms in other parts of the District have become progressively larger.
- Cochrane District reported a total of 75,235 acres of farmland in 2006, down from 82,333 acres in 1996. Historically, Cochrane District reported a much larger area of farmland with 187,166 acres reported in 1961.
  - The climate and soil conditions in the District allow for the production of a variety of field crops including barley, wheat, oats, mixed grains, and hay crops.
  - Approximately 28,437 acres or 38% of the total farmland base in the District was used for crop production in 2006. Historically, Cochrane District reported 54,161 acres of farmland in crop production in 1961 which suggests that there is considerable potential for expanding crop production in the region.
- The major farm production activities in Cochrane District include hay/fodder production (51% of the farms are primarily engaged in this activity), beef production (23%), dairy production (4%), and other types of animals including horses, sheep, goats, bison, deer/elk (11%).
- The number of farms reporting organic production in Cochrane District is on the rise including the production of fruits/vegetables and animal and/or animal products.
- Given the soil and climate limitations in the region, Cochrane District has a very productive agricultural sector. In 2005, the District reported \$11.2 million in total gross farm receipts.

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<sup>30</sup> In Thunder Bay District the number of farms actually increased between 2001 and 2006 and the reversal is partly attributed to the growing interest in producing agricultural products for the local market.

- The total value added component for agriculture in the District amounted to \$3.6 million in 2005. This translates into 32 cents of value added per dollar of gross farm receipts.
- Between 2001 and 2006, the number of jobs directly supported by agriculture in Cochrane District declined from 305 to 155. 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 Cochrane District farm operators working off the farm increased from 39% to 56%. 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 in northern Ontario but is not captured in the Census data.<sup>31</sup>
- The economic contribution being made by First Nation communities in northern Ontario is important even though much of this activity is not reflected in the Census data.

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<sup>31</sup> 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**

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.<sup>32</sup> 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). Agricultural fairs/exhibitions and farmers' markets are also often identified as forms of agri-tourism activity.

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).

Cochrane District features a variety of agri-tourism/entertainment activities and destinations. Some examples of fresh food / farm product attractions in Cochrane District include Bent Willow Farms located in Kapuskasing (which raise the rare breed of Jacob sheep and sell breeding stock, meat, and various wool products) and Crest View Farm located in Cochrane (which features pick your own fresh produce).

Cochrane District 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).<sup>33</sup>

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<sup>32</sup> Agri-tourism has its roots in the Italian term agriturismo - 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.

<sup>33</sup> 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).

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, Cochrane District features several fairs/exhibitions in August-September.

**Table 6.1: Agricultural Fairs in Cochrane District (2009)**

Name of Fair	Date (2009)	Website	Agricultural Features
Porquis Fair	Aug. 20-22	NA	Farm produce, horseshow
Cochrane Fair	Aug. 28-29	NA	Farm produce, livestock
Matheson and District Fair	Sept. 4-5	NA	Farm produce, livestock and small animals
Porcupine District Fair	Sept. 11-13	NA	Horseshow

NA: not available.

Source: Ontario Association of Agricultural Societies ( [www.ontariofairs.org/cms/](http://www.ontariofairs.org/cms/) ).

In September 2009, the neighbouring District of Temiskaming hosted the 2009 edition of the International Plowing Match and Rural Expo. This marked the first time the event was held in northern Ontario. The event featured displays on the agriculture, mining, and forestry sectors as well as local food sampling. Additional details on the 2009 International Plowing Match and Rural Expo can be accessed at the following website: <http://www.ipm2009.net/>

### 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.<sup>34</sup> In 2008,

<sup>34</sup> 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.

the total estimated economic impact of Ontario farmers markets was at least \$641 million.<sup>35</sup> 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%.<sup>36</sup> 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).<sup>37</sup>

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).

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

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<sup>35</sup> 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).

<sup>36</sup> 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).

<sup>37</sup> Small markets are defined in the study as markets with fewer than 20 vendors while large markets have 40 or more vendors.

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).<sup>38</sup>

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).<sup>39</sup>

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, Cochrane District features at least 3 farmers' markets.

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<sup>38</sup> 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  $\pm 3.0$  percentage points, 19 times out of 20, of what they would have been had the entire adult population been polled.

<sup>39</sup> 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 Cochrane District**

Name of Market	Community	Year Established	Location / Operating Days & Hours	Operating Months	Approx. # of Vendors	Website
Kapuskasing Farmers' Market	Kapuskasing	1987	Circle Street Sat. 8am to 12pm	July to Oct.	10 - 15	NA
Cochrane Farmers' Market	Cochrane	1988	Cochrane Agricultural Society Fairgrounds Sat. 9am to 12 pm	End of July to Oct. Thanksgiving weekend	10 - 15	NA
Mountjoy Independent Farmers' Market	Timmins	NA	814 Park Avenue, Centennial Hall Sat. 8am to 12pm	July to Oct.	NA	NA

NA = not available.

Source: Farmers' Markets Ontario ([www.farmersmarketsontario.com/Markets.cfm](http://www.farmersmarketsontario.com/Markets.cfm) ) and/or respective market or community websites.



## **7.0 Agricultural Related Businesses and Economic Impact**

### **7.1 Introduction**

The economic impact of agriculture in the Study Area (Thunder Bay, Rainy River, Kenora and Cochrane Districts) 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 this study is 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 B.

#### ***Direct Impacts***

Direct impacts refer to the on-farm jobs and farm gate sales generated by the agriculture sector in the Study Area. This information was taken from the 2006 Population Census of Canada and the 2006 Agricultural Census. This data also yielded information on the economy of Thunder Bay, Rainy River, Kenora and Cochrane Districts including general labour trends.

#### ***Indirect Impacts***

For the purpose of this study, 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 was a survey-based 'input-output-like' approach. This was completed through a telephone survey conducted between July and September 2009. 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) as well as three agri-economic impact studies (2001 to 2003) and an aquaculture economic impact study (2007) in northeastern Ontario.

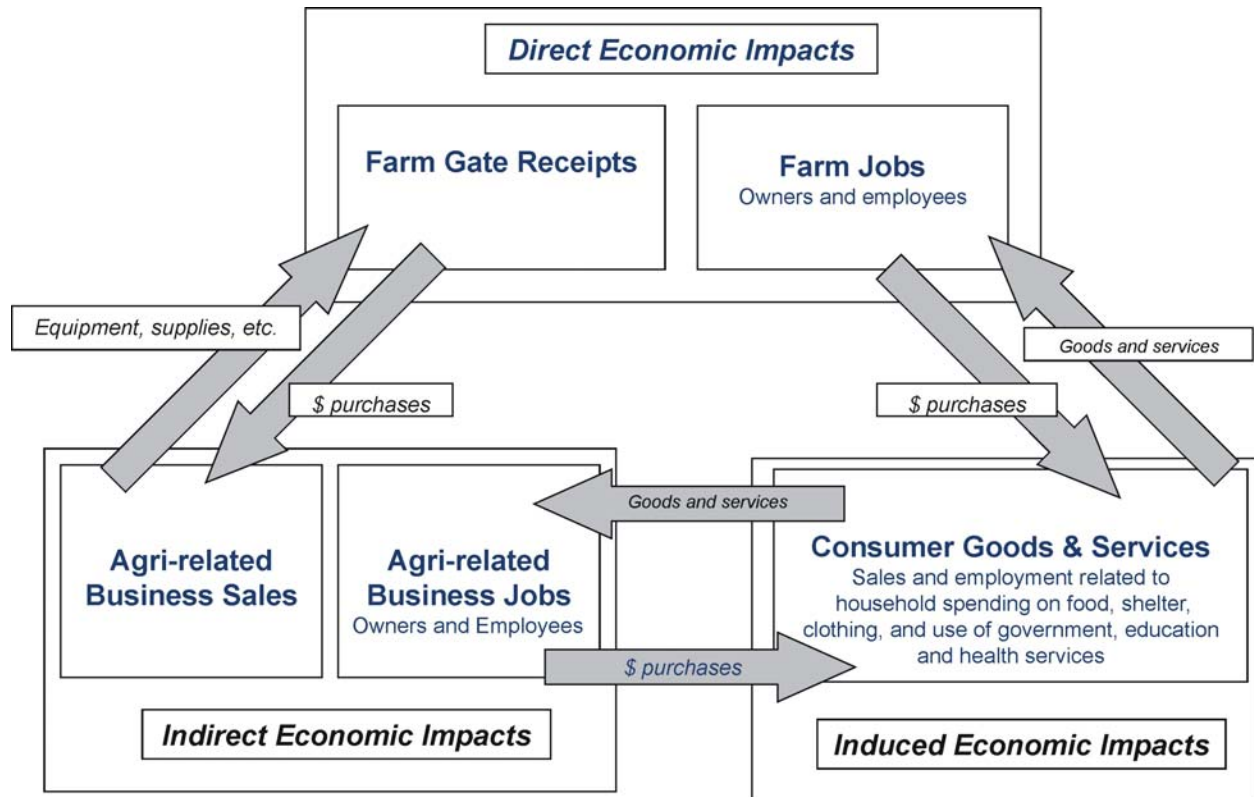
The methodology was designed to identify the value of gross sales and the jobs produced by a sample of agri-related businesses. From this sample, an estimate was produced for the total population of agri-related businesses in the Study Area. This in turn provided an estimate of the economic impact of 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 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 (2006) 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 Agri-Related Business Survey: Business Profile**

### ***Development of the Business List and Survey Sample***

The survey was based on a random sample of agri-related businesses in the Study Area. A list of agri-related businesses was developed by collecting business names and contact information from a number of sources including the four Federations of Agriculture in the Study Area. This work was coordinated by the NODN Agricultural Study Coordinator, Frank Scarcello, and HCA staff also assisted in following up and verifying some of the business contact information. For the purpose of estimating the local economic impact of agriculture in the Study Area, the focus was on identifying and surveying agri-related businesses that are located in the Study Area.<sup>40</sup>

Using the above process, a list of 278 agri-related businesses was compiled for the Study Area. The distribution of agri-related businesses in the Study Area is as follows:

- 140 agri-related businesses in Thunder Bay District;
- 66 agri-related businesses in Rainy River District;
- 51 agri-related businesses in Cochrane District; and
- 21 agri-related businesses in Kenora District.

In order to obtain a high level of confidence in the results (approximately 95%), it was determined that 150 businesses would need to be surveyed. This was the number of businesses that were actually surveyed by random selection.

As shown in Table 7.1, the distribution of the sample of randomly selected agri-related businesses is very comparable with the distribution of the total agri-related businesses in the Study Area as well as the distribution of the total gross farm receipts across the four Districts.

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<sup>40</sup> Farms in northwestern Ontario also deal with a number of businesses in Manitoba and the United States. Appendix D provides a brief overview of this business activity including results from a small survey.

**Table 7.1: Distribution of the Agri-business Survey Sample by District**

District	Total Agri-related Businesses in the Study Area		Total Businesses Surveyed		Total Gross Farm Receipts 2005 <sup>a</sup>	
	#	%	#	%	\$ million	%
Kenora	21	7.6%	11	7.3%	\$5.5	8.8%
Cochrane	51	18.3%	30	20.0%	\$11.2	18.0%
Rainy River	66	23.7%	41	27.3%	\$13.1	21.2%
Thunder Bay	140	50.4%	68	45.3%	\$32.3	52.0%
Total	278	100.0%	150	100.0%	\$62.1	100.0%

Source: Harry Cummings and Associates, 2009 Agri-business survey.

<sup>a</sup> Statistics Canada, 2006.

### ***Location of Agri-related Businesses in the Study Area by Community***

As shown in Table 7.2, the agri-related business survey included businesses located in urban areas including the City of Thunder Bay, Dryden and Timmins as well as towns, villages and rural townships.

**Table 7.2: Distribution of the Agri-business Survey Sample by Community**

District	Community	#	%
Kenora	Dryden	10	6.7%
	Oxdrift	1	0.7%
Cochrane	Cochrane	27	18.0%
	Timmins	2	1.3%
	Matheson	1	0.7%
Rainy River	Fort Frances	13	8.7%
	Emo	13	8.7%
	Stratton	6	4.0%
	Rainy River	4	2.7%
	Devlin	2	1.3%
	Barwick	2	1.3%
	Bergland	1	0.7%
Thunder Bay	Thunder Bay	55	36.7%
	Murillo	7	4.7%
	Kakabeke Falls	2	1.3%
	Neebing	2	1.3%
	Oliver Paipoonge	1	0.7%
	O'Connor	1	0.7%
Total		150	100.0%

Source: Harry Cummings and Associates, 2009 Agri-business survey.

**Types of Businesses Surveyed**

All of the businesses surveyed have a direct linkage with the agricultural sector in that they sell products or services directly to, and/or buy products or services directly from agricultural producers. These businesses also typically conduct trade with other sectors of the economy. The 150 surveyed businesses were categorized according to their primary activity using the North American Industry Classification System (NAICS). This system separates Canadian businesses into twenty different industrial sectors such as Manufacturing, Retail Trade, and Agriculture and related support industries.

As shown in Table 7.3, businesses from 12 different industrial sectors participated in the survey which provides an indication of how extensive the local agriculture sector is linked to the wider economy.

**Table 7.3: Distribution of the Agri-business Survey Sample by Industry Sector**

Industry Sector	#	%
Retail Trade	55	36.7%
Wholesale Trade	29	19.3%
Construction	12	8.0%
Finance and Insurance	12	8.0%
Professional Services <sup>a</sup>	10	6.7%
Other Services <sup>b</sup>	10	6.7%
Manufacturing	9	6.0%
Agriculture Support Activities	3	2.0%
Transportation	3	2.0%
Management, Waste Management	3	2.0%
Mining, Oil and Gas Extraction	2	1.3%
Real Estate, Rental and Leasing	2	1.3%
Total	150	100.0%

<sup>a</sup> Professional Services includes accounting and tax services, legal services, etc.  
<sup>b</sup> Other Services includes machinery/equipment repair services, welding services, machining services, etc.  
 Source: Harry Cummings and Associates, 2003 Agri-business survey.

**General Business Characteristics by Industrial Sector**

During the course of the telephone survey, business managers were asked to provide information on the types of products/services they sold to/bought from farmers in the Study Area. Businesses were also asked to comment on any changes they have experienced over the past five years with respect to the number of people employed in their business. They were also asked whether they expect the size of their workforce to change in the next five years. Additionally, businesses were asked to comment on any difficulties they are experiencing in finding suitable employees from the local labour force. Finally, businesses were asked to provide any general comments on the significance of agriculture to their business and the local economy.

A brief overview of the 12 industrial sectors represented in the survey is presented below.

***i) Retail Trade***

Businesses in the retail trade sector are primarily engaged in buying products for resale to the general public for personal or household consumption, and in providing related services such as installation and repair. However, these businesses also have strong backward linkages to agriculture through the sales of products such as trucks and truck parts, all terrain vehicles, snow blowers, building materials, tools, and computers.

A total of 55 businesses from the retail sector participated in the survey, examples of which include Northern Computers in Thunder Bay, West End Motors in Fort Frances, KK Penner Tires in Dryden, and Allen's Home Hardware in Cochrane.

The 50 firms that provided employment data collectively employ 597 people (full time equivalents). Although the majority of the firms reported that there was minimal or no change to the size of their workforce over the last five years, a number of firms reported that their business activity has declined and some have downsized. Many of the businesses pointed to the recent economic recession and the general decline in the forestry sector as the factors behind the slowdown in business activity. While some businesses anticipate that they will be expanding in the next five years others are less sure of when the economy will recover and will not risk expansion in the near future. In general, the firms are able to hire their personnel locally when needed. As noted by one firm, there are a high number of unemployed people in the region and finding employees at this time is not challenging. However, at least one firm expressed concern about the number of young people that are leaving northern Ontario.

Although some of the businesses reported that their retail trade with farms is small, they still consider it to be important because the agriculture sector helps to diversify the local economy and is relatively stable in contrast to the forestry sector. It was also suggested that the actual impact of agriculture in the local economy is larger than what people think because of all the attention that has traditionally been placed on the forestry and mining sectors.

Several businesses noted that agriculture has potential for further growth in the region and suggested that the government needs to take a larger role in promoting agriculture in northern Ontario including providing incentives to attract young people into the industry.

Several businesses commented on the growing consumer interest in local produce and farm products in northwestern Ontario. It was suggested that the local food programs, such as food basket programs where consumers receive a variety of local produce for a monthly fee, are gaining popularity in some regions. However, it was suggested that more needs to be done to promote these types of initiatives across northern Ontario. It was also suggested that land use policies need to support a combination of small scale

and large scale farm operations to facilitate easier entry into small scale production activities.

Other activities which are viewed as emerging opportunities for the agriculture sector in northern Ontario include the new abattoir which is being constructed in Emo and the biomass mill in Fort Frances which can utilize grass and straw crops mixed with wood waste. It was also noted that underutilized agricultural lands in Cochrane District are being examined for potential biomass production for energy generation.

## **ii) Wholesale Trade**

The wholesale trade sector is comprised of a variety of business types including farm equipment, livestock feed and supplies, and bulk fuels. These businesses have strong backward linkages to agriculture. Forward linkages are also present, primarily through the purchase of seed and grain for resale.

A total of 29 businesses from the wholesale trade sector were surveyed, examples of which include Oliver Dairy Supply in Thunder Bay, Thunder Bay Co-op and Farm Supplies in Thunder Bay, Degagne Equipment in Emo, Petro-Canada in Dryden, New North Fuels in Timmins, and Cochrane Farm and Industrial Supply in Cochrane.

The 26 firms that provided employment data collectively employ 240 people (full time equivalents). Although the majority of the firms reported that there was minimal or no change to the size of their workforce over the last five years, a number of firms reported that their business activity has declined and some have downsized. Several of the firms reported that the decline of the forestry sector is the major factor contributing to the slowdown/decline in their business activity. Some businesses are trying to diversify their products to expand their market base while continuing to serve the agriculture base. In general, the firms are able to hire their personnel locally when needed but most of the businesses are not planning to expand any time soon.

Some of the businesses commented on the contraction of the agriculture sector in recent years. In particular, businesses noted that the number of dairy farms in the region has declined substantially in recent years. One business representative also noted that equipment sales are being lost to firms in southern Ontario. It was also noted that the decline of the forestry sector impacts farms as some farm operators rely on the forestry sector for a source of primary or secondary income. Despite these challenges, some businesses are optimistic that more farmers will eventually migrate from southern Ontario to take advantage of the lower land prices in the north.

Businesses also acknowledge the growing interest in local food which could stimulate more interest in farming in the region. Several firms emphasized that need for the government to set policies that make agriculture a bigger priority for funding.

### **iii) Construction**

The construction sector is comprised of a variety of business types including building construction, road construction, and specialty trade contractors. These businesses have strong backward linkages to agriculture.

A total of 12 businesses were surveyed from this sector, examples of which include R and S Bobcat Services in Murillo, Allen's Enterprises Services in Thunder Bay, Mel's Wells Drilling in Emo, Wildwood Contracting Excavating in Dryden, and CGV Builders in Cochrane.

The 11 firms that provided employment data collectively employ 245 people (full time equivalents). Only a small number of the firms experienced growth over the last five years in terms of jobs and the growth was small (e.g. 1-3 persons hired). Although many of the firms expect to be busier as the economy recovers, few of the firms anticipate having to hire more staff beyond what they already have (i.e. they expect to keep the same amount of staff and work more hours when business increases). In general, the construction firms are able to hire their personnel locally when needed.

Although the firms acknowledge that the overall number of farms is declining in the region, many of the businesses reported that farmers continue to be an important component of their client base. Furthermore, it was observed that some areas of the agricultural sector are growing in northern Ontario including the beef and horse sectors where the number of livestock is on the rise (this was confirmed by the Census of Agriculture data). One of the business representatives also commented that more people from the city are moving into rural areas and getting a couple of horses and becoming hobby farmers.

### **iv) Finance and Insurance**

A total of 9 financial service and 4 insurance service businesses participated in the survey examples of which include the Bank of Montreal in Thunder Bay, Provincial Alliance Credit Union in Kakabeka Falls, Northern Lights Credit Union in Rainy River, BMT Insurance in Cochrane, and the Cooperaters Insurance in Thunder Bay.

The nine firms that provided employment data collectively employ 65 people (full time equivalents). Some of the firms (branch offices) have experienced growth over the last five years in terms of jobs and several expect their business to continue to grow. Although some of these businesses noted that farm accounts do not make up a significant portion of their total business activity, it was generally acknowledged that agriculture makes an important contribution to the wider economy.



**v) Professional Services**

The professional service sector is comprised of a variety of businesses including veterinary services, legal services, accounting services, and engineering services. A total of 10 businesses were surveyed from this sector, examples of which include Slate River Veterinary Services in Thunder Bay, Cochrane Veterinary Clinic in Cochrane, Nor-west Animal Clinic in Fort Frances, Emery Ruff Law Office in Rainy River, and Trow Associates (Engineering/Surveying) in Cochrane.

The 10 firms that participated in the survey collectively employ 48 people (full time equivalents). In general, these firms are not expecting to grow in the next five years. Some firms have experienced a decline in their agri-related business over the last five years with the drop in farm numbers.

Three of the four participating veterinary clinics noted that their agri-related business activity has slowed down. One of the clinics noted that their small animal business is increasing while their large animal activity is shrinking. In general, the veterinary clinics are able to hire their lay staff locally but typically have to go outside northern Ontario to recruit veterinarians. One of the biggest challenges for vet clinics when they hire/recruit veterinarians from outside the region is getting them to stay in the region.

Despite the decline in farm numbers, the veterinary clinics emphasized that the agri-related component of their business remains significant accounting for 20-50% of their business activity. The clinics also recognize the importance of agriculture to the wider economy. However, as noted by one clinic representative, the local agriculture industry is generally overlooked and its impact is underestimated.

**vi) Other Services Industries**

The 'other services' sector is comprised of establishments not classified to any other industry category. Businesses in this sector typically have backward linkages to the agriculture sector in the form of services provided to farms including farm vehicle and equipment repairs, welding services, and tire repair services.

A total of 10 businesses were surveyed from this sector, examples of which include Tanks Welding in Stratton, Solomon and Sons Machining in Dryden, Central Service in Emo, and Mark's Diesel in Cochrane,

The 10 firms that participated in the survey collectively employ 70 people (full time equivalents). In general, the firms are able to hire their personnel locally. Several of the firms noted that the decline of the forestry sector combined with the recent economic recession has negatively impacted their sales activity. Most of the firms do not expect to grow over the next five years in light of the decline of the forestry sector.

Most of the firms recognize the important contribution that agriculture makes to the local economy. As expressed by one business representative, "farmers roll their money back

into the local economy and their money is always in motion.” Another business representative reported that the local cattle sales “pull a lot of buyers in from Manitoba and Eastern Ontario who spend money on other activities while in the region.”

Several firms suggested that the agriculture sector has potential for further growth. As noted by one business representative, the interest in locally grown food is growing and although there may be higher food prices associated with locally grown, it was suggested that consumers are beginning to accept this as a beneficial trade-off for freshness and supporting local farmers.

One business representative commented that local young people are increasingly interested in farming but face many barriers to entry. It was suggested that all levels of government need to take a bigger role in facilitating the entry of young people into agriculture.

It was suggested the completion of the new abattoir in Emo will have a significant economic impact in northwestern Ontario in terms of the direct employment it provides and also in making more locally grown meat products available in the region and perhaps stimulating more cattle production and more business activity for farm supply businesses.

#### **vii) *Manufacturing***

Businesses in the manufacturing sector have backward linkages to the agriculture sector in the form of goods and services produced for farms such as livestock feed, livestock bedding, concrete, and the fabrication of machines and equipment parts. Manufacturing businesses can also have forward linkages in the form of the agri-related products that they process for the general consumption (e.g. meat, dairy products).

A total of nine manufacturing businesses were surveyed six of which have backward linkages and three with forward linkages. Examples of businesses in the Study Area with backward linkages to the agriculture sector include Thunder Bay Feeds in Thunder Bay, Nussbaumers Machine Shop in Emo, Custom Concrete in Cochrane, and Murillo Millwork in Murillo. Examples of businesses in the Study Area with forward linkages to agriculture include Thunder Oak Cheese Farm in Neebing and Thunder Bay Meat Processing in Murillo

The nine firms that participated in the survey collectively employ 76 people (full time equivalents). Although several of the firms noted that the recent economic recession has negatively impacted their sales activity, six of the nine firms expect their business to grow in the next five years and hire more employees. The projection for growth was reported by both types of manufacturing firms – those with backward and forward linkages to the agriculture sector. In general, the manufacturing firms are able to hire their personnel locally although one of the firms noted that it can be challenging to maintain employees in some of the more labour intensive activities.

Many of the manufacturers acknowledged the important role that agriculture plays in the local economy. One manufacturing sector representative commented that “next to the forestry industry, agriculture is probably the largest sector in our area and it’s important for the jobs it supports on the farm and spinoffs for businesses that deal with farmers.”

Another sector representative noted that “agriculture is the backbone of the country” but expressed concern that farmers are not getting a sufficient return for their products while the costs of farm inputs such as fertilizer continue to go up as do the costs to consumers. It was also noted that farmers are adding to their workload by earning income in off-farm jobs to maintain their farm operations.

It was suggested that the isolation of some communities in northern Ontario from major farm supply/equipment companies represents an opportunity for local businesses to expand and/or diversify to respond to the needs of the agriculture sector. As an example, one firm noted that it sometimes takes less time to make custom equipment parts for farmers than to wait on delivery of parts from outside the region. Time saving services and goods are especially valued by farmers when dealing with time sensitive farming activities such as harvesting crops.

#### ***viii) Agricultural Services***

Businesses in the agricultural services sector often have backward linkages in the form of services provided to farms such as hoof trimming and farrier services. A total of three businesses from this sector were surveyed. The business owners are self-employed.

At least two of the businesses expect to expand their operation in the next five years. As noted by one of the business operators, the horse sector in the region is continuing to grow as more people are buying horses for recreational enjoyment. Another operator reported that although the number of dairy farms is declining, “the dairy business remains good and the remaining dairy farmers are young and progressive and will probably be around for the long term.”

#### ***ix) Transportation***

A total of three businesses in the transportation sector were included in the survey. These businesses have backward linkages to agriculture through the transport of livestock, feed and equipment.

The three firms that participated in the survey collectively employ 80 people (full time equivalents). At least one of firms reported that it is a challenge to find local qualified drivers and heavy equipment operators in the Cochrane region. At least two of the firms expect to grow over the next five years and increase their workforce. However, one of the firms expressed uncertainty about whether their agri-related business component will increase in light of the financial hardship faced by farmers. It was reported that farm returns (i.e. farm receipts) are not keeping pace with rising business costs which could lead to a loss of more farms in the region in the coming years.

**x) Administrative Support, Waste Management**

A variety of business activities are included in this sector including firms that provide administrative support to other businesses/organizations as well as businesses involved in waste collection and recycling and material recovery. The survey included three firms from this sector which collectively employ just over 150 people (full time equivalents).

Two of the firms are involved in waste management/recycling. The third firm sources local produce for institutions in the region as part of its operations. All three firms reported that there are no challenges with respect to hiring local personnel. At least one of the firms has hired students in the past but there has not been sufficient work recently to maintain these positions.

**xi) Mining / Quarrying**

Businesses involved in quarrying have backward linkages to agriculture through the provision of sand and gravel. Some of these types of businesses also offer construction services. The survey included two sand and gravel firms.

A total of 13 full time equivalent jobs are supported by the two firms. Both of the firms reported that there are no challenges with respect to hiring personnel. It was noted that the work activity can fluctuate greatly from year to year depending on the general economy and the number of construction projects on the go in the region.

As noted by one quarry sector representative, "agriculture is an important part of the local economy and when farmers are prospering or suffering it has a noticeable domino effect on businesses in community."

**xii) Real Estate**

Real estate agencies have backward linkages to the agriculture sector. The survey included two real estate firms. The agri-related services provided by these agencies include farm appraisals and land transactions.

Both of the agencies reported that there are no challenges with respect to hiring personnel. It was noted that a number of agents are soon to retire. The agencies reported that in general farm numbers in the north are decreasing while the average farm size is increasing, which is consistent with what the Census data shows.

It was noted that farmland in northern Ontario is generally less expensive than farmland in southern Ontario. However, it was also reported that some farms in the region have equivalent land prices to those in the south (e.g. \$2,000 per acre) depending on the type and quality of land (e.g. soil fertility, tile drainage, etc.), the size of the land parcel, and the type and quality of buildings on the farmstead.

### **7.3 Indirect Impacts: Agri-related Employment and Sales**

As part of the agri-business survey, business managers were asked to provide information on gross sales and employment associated with their business operation. Businesses were also asked to estimate the percentage of sales related to the agriculture sector and to identify the location of their sales (i.e. northern Ontario, southern Ontario, other provinces, and international).

#### ***Total Gross Sales for the Agri-related Businesses Surveyed***

Total gross sales for the businesses surveyed include sales related and unrelated to the agriculture sector. For example, a plumbing business may have sales to farmers for their farm business, sales to farmers for their house, and sales to non-farmers. Agriculture-related sales include only the portion of sales that are related to the farm business.

The total gross sales (agri-related and non-agri-related combined) for the 93 businesses that provided data amounts to \$223.9 million. A total of 45 businesses reported \$1 million or more in annual gross sales while 20 businesses reported annual gross sales of under \$100,000. Statistics Canada classifies an industry with less than \$5 million in annual sales as a small business while a medium size business has sales between \$5 million and \$25 million per year and a business with annual sales above \$25 million is considered large. By this classification, agri-related businesses in the Study Area are generally small in size. Approximately 87% of the businesses surveyed (81 of 93) had sales under \$5 million.

#### ***Total Agri-related Sales for the Businesses Surveyed***

The survey asked respondents to estimate the percentage of their sales that are related to agriculture, either by providing products and/or services to farm businesses, or by purchasing products of agricultural origin. The results indicate that \$25,964,435 or about 12% of total gross sales for the 93 agri-related businesses that provided sales data are related to agriculture.

Businesses were asked to report on the location of their sales. As shown in Table 7.4, approximately 82% of the total agri-related sales were made within northern Ontario while 17% of sales were made to southern Ontario and 1% of total sales were outside Ontario.

**Table 7.4: Distribution of Total Agri-related Sales by Location of Sales for the Survey Sample**

	Sales in Northern Ontario	Sales in Southern Ontario	Sales in other Provinces	Sales outside Canada	Total Sales
Agri-related sales by Location	\$21,282,455	\$4,557,041	\$43,672	\$81,267	\$25,964,435
Percentage of Total Agri-related Sales	82.0%	17.5%	0.2%	0.3%	100.0%

Source: Harry Cummings and Associates, 2009 Agri-business survey.

### ***Estimated Total Agri-related Sales for all Agri-related Businesses in the Study Area***

From the sample of 93 businesses that provided sales data, we can estimate the total agri-related sales for all 278 agri-related businesses in the Study Area. The 93 businesses surveyed represent just over 33% of the total agri-related businesses in the Study Area ( $93/278 * 100$ ). By dividing the total number of agri-related businesses (278) in the Study Area by the total number of businesses that provided sales data (93), a sampling multiplier of 3 (e.g.  $278/93 = 3$ ) can be used to estimate the total gross agri-related sales for all agri-related businesses in the Study Area.

The estimated total gross agri-related sales for the 278 businesses in the Study Area amounts to \$77,893,305 ( $\$25,964,435 \times 3$ ).

### ***Total Employment for the Agri-related Businesses Surveyed***

In estimating the total number of employees associated with the agri-related businesses, the survey estimated full time equivalents (FTE) for all full time, part time and seasonal employees.<sup>41</sup> The share of sales activity reported by each business as related to agriculture was then used to estimate the share of employment related to agriculture.

The total number of jobs at the 122 businesses that provided employment data amounts to 1,712 which consist of 1,208 full-time employees, 336 part-time employees, and 168 seasonal employees. Based on the hours and weeks worked over the course of a year, and converting to FTE's, the estimate for the total number of FTE jobs at the businesses surveyed is 1,615. This includes all employees (full-time, part-time and seasonal employees) for the businesses surveyed, regardless of whether or not they perform activities related to the agriculture sector.

<sup>41</sup> Based on a 1,875 hours per year workload (7.5 hours a day x 5 days a week x 50 weeks a year). Using the FTE jobs as a measure of employment allows for greater insight into the total number of jobs, at the full-time level that are supported by sales of goods and services to farms.

### ***Estimated Total Agri-related Employment for all Agri-related Businesses in the Study Area***

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. A total of 122 businesses provided their total employment number and identified the proportion of their sales that were agri-related. For the 122 businesses that provided data, this translates into 198 FTE agri-related jobs.

From the sample of 122 businesses that provided job data, we can estimate the total agri-related jobs for all 278 agri-related businesses in the Study Area. The 122 businesses surveyed represent 44% of the total agri-related businesses in the Study Area ( $122/278 * 100$ ). By dividing the total number of agri-related businesses (278) in the Study Area by the total number of businesses that provided sales data (122), a sampling multiplier of 2.3 (e.g.  $278/122 = 2.3$ ) can be used to estimate the total agri-related jobs for all agri-related businesses in the Study Area.

The estimated total agri-related jobs for the 278 agri-related businesses in the Study Area amounts to 455 FTE ( $198 \times 2.3$ ).

### ***Summary of Indirect Impacts of Agriculture in the Study Area***

The analysis shows that businesses that buy from or sell to the agriculture sector in the Study Area generate a significant amount of sales and employment. It is estimated that agri-related businesses in the Study Area generated \$77.9 million in agri-related sales in 2008.

Indirect employment is a further impact of the agriculture sector. It is estimated that agri-related businesses in the Study Area supported 455 full time equivalent agri-related jobs in 2008.

## **7.4 Induced 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 current study induced sales were not calculated, although this would clearly add a significant figure to the overall agri-related sales total of agri-related businesses in the Study Area through the salaries of employees in the Health and Social Services, Education and Government Services sectors.

In this case induced employment refers to employment generated by the wages agriculture and agri-related workers spend 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<sup>42</sup> (wholesale and retail trade, accommodation and restaurant, 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.

Given the large geographic area covered by this study and recognizing that there is a greater concentration of agricultural and agri-related business activity in some regions of the Study Area (e.g. Thunder Bay), two separate municipalities were examined to estimate a low and high range of induced impacts.

### ***Low Estimate***

The Municipality of Chapple in Rainy River District was selected to estimate a low or conservative estimate of the induced impact of agriculture on the rest of the economy. Chapple had the highest number of farms and on-farm jobs in Rainy River District in 2006 and the population is largely rural based. Chapple had 70 jobs in agriculture in 2006 or 16% of the total jobs in the municipality. The total number of jobs in the two primary production industries in Chapple, Agriculture and Manufacturing, was divided into the total number of jobs in the Health and Social Services, Education and Government sectors.<sup>43</sup> This calculation indicates that for every job created in the two primary production industries, 0.6 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 (1,120 direct and 455 indirect jobs for a total of 1,575 jobs X 0.6), it indicates that 945 induced jobs are supported by agriculture and agri-related businesses.

### ***High Estimate***

To obtain a high range estimate of the induced jobs in the Study Area, the Municipality of Oliver Paipoonge in Thunder Bay District was selected as it had the highest number of farms and on-farm jobs in Thunder Bay District in 2006 and is situated next to a major urban centre (City of Thunder Bay). Oliver Paipoonge had 370 jobs in agriculture in

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<sup>42</sup> 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.

<sup>43</sup> In 2006, Chapple reported 70 jobs in agriculture and 65 jobs in manufacturing for a total of 135 jobs in primary production activities. During the same year Chapple reported 35 jobs in health and social services, 25 jobs in educational services, and 20 jobs in government services for a total of 80 government service jobs (Statistics Canada, 2006).



2006 or 11% of the total jobs in the municipality. The total number of jobs in the two primary production industries in Oliver Paipoonge, Agriculture and Manufacturing, was divided into the total number of jobs in the Health and Social Services, Education and Government sectors.<sup>44</sup> This calculation indicates that for every job created in the two primary production industries, 1.2 induced jobs were supported in the three public service sectors.

When this number is applied to the total number of direct and indirect jobs related to agriculture in the study area (1,120 direct and 455 indirect jobs for a total of 1,575 jobs X 1.2), it indicates that 1,890 induced jobs are supported by agriculture and agri-related businesses.

## **7.5 Total Direct, Indirect and Induced Impacts**

As shown in Table 7.5, the agriculture sector in the Study Area sustains a total of 1,120 direct jobs and 455 indirect jobs. It also sustains between 945 and 1,890 induced jobs in the Study Area. Thus, farm operations, businesses they buy from and sell to, and services that support farmers and farm businesses, are estimated to support between 2,520 jobs and 3,465 jobs.

When we take the total employment figure and divide it by the total number of direct agriculture jobs, we get a multiplier of 2.3 to 3.1. This calculation allows us to estimate that for every job in the agriculture sector an additional 1.3 to 2.1 jobs are supported in the wider economy. The high range job multiplier is more closely linked to the Thunder Bay region given the concentration of dairy and other agriculture sectors in the region and the larger agri-related business base.

In terms of dollars, agriculture makes a substantial contribution to the local economy. As shown in Table 7.5 direct sales associated with the agricultural sector amount to \$62.1 million while indirect sales associated with agri-related businesses amount to \$77.9 million. In total, approximately \$140 million in agri-related sales are generated in the Study Area. In order to estimate the sales expenditure multiplier for the Study Area, we divide the total amount of agri-related sales by the total amount of direct sales. This produces a sales expenditure multiplier of 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 produced. Please note, these are gross agriculture-related sales and no attempt has been made to identify the “net value-added” component.

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<sup>44</sup> In 2006, Oliver Paipoonge reported 370 jobs in agriculture and 285 jobs in manufacturing for a total of 655 jobs in primary production activities. During the same year Oliver Paipoonge reported 375 jobs in health and social services, 175 jobs in educational services, and 215 jobs in government services for a total of 765 government service jobs (Statistics Canada, 2006).

**Table 7.5: Total Direct, Indirect and Induced Impacts of Agriculture in the Study Area**

	Sales	Jobs
Direct <sup>a</sup>	\$62,131,371	1,120
Indirect	\$77,893,305	455
Induced		945 to 1,890
Total	\$140,024,676	2,520 to 3,465

<sup>a</sup> Direct values are taken from Statistics Canada, Population Census and Census of Agriculture 2006  
Source: Harry Cummings and Associates, 2009 Agri-business survey.

## 7.6 Comparison to Other Studies

A number of other agri-related business surveys have been conducted in various regions of Ontario using the same methodology applied here. Research has been completed for: Huron County (1998), Simcoe County (1999), Perth County (2000), Lambton County (2000) the combined counties of Prescott, Russell, Stormont, Dundas and Glengarry (1999), the combined counties of Frontenac, Lennox & Addington, Leeds and Grenville (2000), the combined counties of Elgin, Middlesex and Oxford (2000), the combined counties of Lanark and Renfrew (2000), the new City of Ottawa (2000), Waterloo Region (2003), Algoma and Manitoulin Districts (2001), and the Blue Sky Region in Northern Ontario which is comprised of Nipissing, Parry Sound, the City of Greater Sudbury and the east portion of Sudbury District (2001). Tables 7.6 and 7.7 compare sales and employment data from research collected in other areas of Ontario with the results from the Thunder Bay, Rainy River, Kenora and Cochrane Districts agri-related business survey.

While sales and job figures are not directly comparable because of differences in size and characteristics of the different study areas, the multipliers associated with these figures provide some insights into the importance of the linkages between agriculture-related business and farm enterprises.

As shown in Table 7.6, the sales multiplier estimated for the Study Area (2.3) is similar to the Algoma Manitoulin region as well as some areas of southern Ontario including the Lanark and Renfrew region (2.4) and the Elgin, Middlesex and Oxford region (2.3).

**Table 7.6: Total Agri-related Sales and Sales Expenditure Multiplier for the Study Area Compared to Other Studies (\$ millions)**

Study Area	Direct Sales <sup>c</sup> (Farm gate sales)	Indirect Sales (Agri-related businesses)	Total Agri-related Sales	Sales Expenditure Multiplier
<b><i>Thunder Bay, Rainy River, Kenora, Cochrane Districts</i></b>	<b>\$62.1</b>	<b>\$77.9</b>	<b>\$140.0</b>	<b>2.3</b>
Temiskaming	\$44.1	\$100.9	\$145	3.3
Algoma Manitoulin	\$31.3	\$41.3	\$72.7	2.3
Blue Sky Region <sup>a</sup>	\$43.6	\$42.6	\$86.2	2.0
Waterloo	\$379.6	\$897.3	\$1,276	3.4
Lambton	\$301	\$472	\$773	2.6
Elgin, Middlesex, Oxford	\$1,131	\$1,490	\$2,621	2.3
Huron <sup>b</sup>	\$512	\$1,489	\$2,001	3.9
Perth	\$430	\$653	\$1,083	2.5
Simcoe	\$265	\$518	\$783	3
Frontenac, Lennox & Addington, Leeds & Grenville	\$183	\$351	\$534	2.9
Lanark & Renfrew	\$98	\$142	\$240	2.4
Prescott, Russell, Stormont, Dundas & Glengarry	\$363	\$756	\$1,119	3.1
City of Ottawa	\$137	\$265	\$402	2.9

<sup>a</sup> The Blue Sky Region includes Nipissing, Parry Sound and the eastern portion of Sudbury District, as well as the City of Greater Sudbury.

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

<sup>c</sup> Direct sales values are from Statistics Canada.

Source: Cummings et al., 1998, 1999, 2000, 2001, 2003, 2004 and 2009.

With respect to employment (direct, indirect and induced), the employment multiplier for the Study Area (2.3 to 3.1) is similar to Lambton County (2.3) and Perth County (2.3) for the low range multiplier and Temiskaming District, Simcoe County and the combined counties of Prescott, Russell, Stormont, Dundas and Glengarry for the high range multiplier (Table 7.7).

Comparing the number of on-farm jobs to jobs in agri-related businesses, we find that the Study Area has a 2.5:1 ratio (1,120 ÷ 455), or approximately 2½ on-farm jobs for every one job in an agri-related business. The number of indirect jobs linked to agriculture in the Study Area is relatively stronger compared to other parts of northern Ontario (the Blue Sky Region ratio is 3:1 and the Algoma-Manitoulin ratio is 4:1) and is

similar to the ratios for Lambton County (2.4:1) and the Elgin, Middlesex and Oxford region (2.4:1) in southern Ontario. Huron County, the largest agricultural county in the province in terms of total farm gate sales, has a very large ratio at 1:3 (approximately one on-farm job for every three jobs in agri-related businesses) indicating a significant agri-related business base in the region.

**Table 7.7: Total Agri-related Jobs and Employment Multiplier for the Study Area Compared to Other Studies**

Study Area	Direct Agri. Jobs <sup>c</sup>	Indirect Jobs <sup>a</sup> (Agri-related businesses)	Induced Jobs	Total Jobs	Employment Multiplier
<b>Thunder Bay, Rainy River, Kenora, Cochrane Districts</b>	<b>1,120</b>	<b>455</b>	<b>945 to 1,890</b>	<b>2,520 to 3,465</b>	<b>2.3 to 3.1<sup>d</sup></b>
Temiskaming	745	526	890	2,161	2.9
Algoma Manitoulin	805	242	1,780	2,827	3.5
Blue Sky Region <sup>b</sup>	1,250	404	3,143	4,797	3.8
Waterloo	3,450	7,616	6,971	18,037	5.2
Lambton	3,920	1,624	3,382	8,926	2.3
Elgin, Middlesex, Oxford	16,515	6,856	9,348	32,720	2.0
Huron	5,025	14,186	3,528	22,739	4.5
Perth	4,935	3,133	3,066	11,131	2.3
Simcoe	4,770	2,237	7,414	14,421	3.0
Frontenac, Lennox & Addington, Leeds & Grenville	4,325	1,935	5,321	11,581	2.7
Lanark & Renfrew	3,010	848	3,163	7,021	2.3
Prescott, Russell, Stormont, Dundas & Glengarry	5,955	4,516	7,007	17,478	2.9
City of Ottawa	3,510	1,045	5,466	10,021	2.8

<sup>a</sup> Indirect jobs are presented as full time equivalents.

<sup>b</sup> The Blue Sky Region includes Nipissing, Parry Sound and the eastern portion of Sudbury District, as well as the City of Greater Sudbury.

<sup>c</sup> Direct employment values are from Statistics Canada.

<sup>d</sup> The high range job multiplier is more closely linked to the Thunder Bay region given the concentration of dairy and other agriculture sectors in the region and the larger agri-related business base.

Source: Cummings et al., 1998, 1999, 2000, 2001, 2003, 2004 and 2009.

## 7.7 Summary of Economic Impact

Key findings for the Study Area (Thunder Bay, Rainy River, Kenora, Cochrane Districts):

- There are over 270 businesses in the Study Area representing 12 different industry sectors that conduct business with farmers.
- The agriculture sector supports between 2,520 and 3,465 jobs through primary production and its linkages to agri-related businesses and various sectors of the regional economy.
- The employment multiplier indicates that for every job in the agriculture sector an additional 1.3 to 2.1 jobs are supported in the wider economy. The high range job multiplier is more closely linked to the Thunder Bay region given the concentration of dairy and other agriculture sectors in the region and the larger agri-related business base.
- The agriculture sector generates approximately \$140 million in sales consisting of \$62.1 million in direct sales (farm receipts) and \$77.9 million in indirect sales (agri-related business sales).
- The sales expenditure multiplier indicates that for every dollar of farm income there is an additional \$1.30 in business sales activity in the wider economy.
- Businesses generally believe that agriculture makes an important contribution to the local economy and has the potential for growth. There is optimism that local business opportunities will increase in the long-term with the expectation that more farmers will migrate to the region from southern Ontario to take advantage of the lower land prices and the improved growing conditions that will result from climate change.
- Farmers are generally viewed by businesses as good customers. Businesses that have large accounts with farmers are also aware that farmers are generally struggling to get a sufficient return on their commodities to cover their input costs and as a result need to rely on off-farm income to some extent.
- Although trade with the agriculture sector is relatively small for some businesses, it is still considered an important sector in that it helps to diversify the economy and is relatively stable in contrast to other resource sectors.
- In general, most of the agri-related businesses reported that they are able to hire their labour needs from the local workforce. An exception is veterinary clinics which often need to recruit veterinarians from outside northern Ontario and face challenges in retaining veterinarians who come from outside the region and eventually return to southern Ontario or go elsewhere.

- Many businesses recognize the growing consumer interest in local produce and farm products and some businesses commented on the growing popularity of local food initiatives and activities including farmers markets, direct farm sales, and food basket programs.
- Although parts of northern Ontario are making progress with local food initiatives, it was suggested that more needs to be done to stimulate further growth of this activity. This includes helping entrepreneurs to expand, diversify, or enter agriculture and increasing consumer awareness and access to local food options.
- Many businesses feel that there is a role for the different levels of government to play in developing and supporting programs and policies directed at facilitating further development of the agriculture sector in northern Ontario. This includes programs/incentives to attract and assist youth who are entering the sector. It was also suggested that land use polices need to be reviewed and modified to ensure that policies do not inhibit the development of small scale farm operations.

## 8.0 Agriculture Sector Challenges and Opportunities

A focus group was conducted with primary producers and other agriculture sector stakeholders from Cochrane District in the Town of Cochrane on April 25, 2009. One objective of the focus group was to present information from the 2006 Census of Agriculture with the group of stakeholders and to identify any major changes/trends in the local agriculture sector since the 2006 Census (see section 5.15). The balance of the focus group was used to discuss challenges and opportunities related to the development of the agriculture sector.

A total of 29 agri-sector stakeholders participated in the session which included representatives from a variety of sectors including beef, sheep, dairy, bison, hog, poultry, field crop, and greenhouse. The discussion group also included local and provincial government representatives. In many cases, the farm operators represented mixed farming operations which were engaged in two or more types of agri-related activities. For example, some farms produced two or more types of livestock as well as field crops. Some of the farm operations were large acreage operations (e.g. 500+ acres) while others were smaller acreage operations (e.g. less than 200 acres).

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

### Farm Viability

Many farmers continue to struggle in obtaining a sufficient return on their products to cover operating expenses. This is resulting in a growing dependence on off farm work to provide extra income to supplement the farm income. At the same time, younger generations are taking notice of the economic challenges in the agriculture industry which is serving to deter many farm youth from continuing on with the family farm and discouraging other youth from considering a career in agriculture. It was noted that the traditional youth groups that promoted agriculture in the region such as 4-H are no longer active. Agri-sector stakeholders link the loss of 4-H clubs to several factors including the loss of OMAFRA funding along with the closure of the OMAFRA agriculture office in Matheson and the loss of farm leaders who have left/retired from the industry.

The current agri-related business base in the District is small relative to other areas of northern Ontario like Temiskaming and Thunder Bay and presents a significant challenge for local farmers who have to deal with the limited availability and higher costs of farm supplies and services.

Agri-sector stakeholders reported that it continues to be challenging to access farm business financing and commercial banks in the area do not feature farm account specialists. It was noted that the situation is different across the border in the Province of Quebec where there are more financial services specifically geared toward farmers.

## Government Regulations, Policies and Support

Agri-sector stakeholders believe that the local agriculture sector is relatively stable compared to the cyclical ups and downs experienced by other economic sectors such as forestry and mining. However, there is a general feeling among agri-sector stakeholders that agriculture in the region has been neglected by policy makers and the time has come for higher government officials to decide if agriculture is going to be supported and allowed to grow to its potential. This includes the potential for attracting more agri-related businesses and jobs back to the region.

A common concern expressed by agri-sector stakeholders in the region is that many of the government policies and support programs for agriculture are directed at models of agri-food production that are based on southern Ontario market realities. It was noted that greater emphasis is needed in developing programs that are sensitive to local farming and market conditions in northern Ontario.

Agri-sector stakeholders identified the need for the development of policies and support programs that address the needs/challenges of farm operations operating in the more localized economies that characterize northern Ontario. Agri-sector stakeholders would like to see northern oriented incentive programs that encourage projects that will establish and enhance the capacity of local agri-food and product processing.

The Northern Ontario Heritage Fund Corporation (NOHFC) was recognized by stakeholders for the important role it played in past years in making funds available for land improvement and farm facility expansion projects. However, these cost sharing programs are no longer available through NOHFC even though the need still exists. It was noted that at the time these funds were made available to agricultural organizations, Cochrane District needed to partner with organizations based in Temiskaming District in order to meet the eligibility requirements. Although the partnership worked well, the arrangement meant that Cochrane District producers were somewhat dependent on the Temiskaming group to support the development interests of Cochrane producers.

Agri-sector stakeholders suggested that the provincial government needs to review and consider adopting some of the programs that the Province of Quebec offers farmers. It was suggested that the type and timeliness of government programs for farmers on the Quebec side of the border are contributing to the sustainability of agriculture in the north and similar initiatives would benefit northern Ontario farmers.

Although Cochrane District continues to be served by a government agriculture service representative based out of New Liskeard in Temiskaming District, this is not viewed by local agri-sector stakeholders as the most effective arrangement. Cochrane District farmers noted that there are no longer government extension services available in the area and that access to private sector consultants is very limited. It was reported that farmers are increasingly using the Internet to access information about farm practices



and farm products/services but it was emphasized that the information is typically directed at farm operations in southern Ontario or elsewhere.

## Research

A key strength of Cochrane District is the large farmland base that could potentially be brought back into production with better yielding and hardier crop varieties developed through research.

Farmers emphasized the importance of maintaining northern based agricultural research stations including the Kapuskasing Experimental Farm which conducts research on forage production, conservation, and utilization as well as cereal crop and horticultural crop production. The Experimental Farm has also played an important role in the development of enhanced beef production practices in northern regions. However, in order to enhance the ability of the Experimental Farm to respond to the needs of producers, producers in the region would like to be more directly engaged in determining the research priorities of the Station.

In other ongoing research, the North Eastern Ontario Soil and Crop Improvement Associations (NEOSCIA) is determining the potential for farm biomass production for energy generation. The Northern Claybelt Agri Network (NCBAN) is also involved in exploring agri and agri-bio based development opportunities in Cochrane District. The organization has completed a comprehensive inventory of the land and soil types in the region and is currently examining market and business opportunities for the development of abandoned and underutilized agricultural lands including biomass production opportunities for energy generation. Producers emphasized that the growth of any biomass sector in the region should aim to be a complementary activity that does not inhibit or restrict existing and potential food production activities.

Agri-sector stakeholders also identified the potential for growing organic spelt in the area which is currently being grown in New Liskeard and has potential as an export crop. Buckwheat was also identified as a potential new crop for the area.

With respect to new value added and processing activities, it was noted that local stakeholders are working on a distillery project for the area which could potentially utilize 5,000 to 10,000 acres of barley/wheat from the region.

Cochrane District currently lacks a local abattoir and retail facility which could be used to process and sell local and regional meats. It was noted that some beef producers are already actively engaged in marketing their beef to local customers and restaurants but the lack of local processing and retail facilities means that value added dollars are leaving the local economy.<sup>45</sup>

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<sup>45</sup> At the time of this discussion, an abattoir feasibility study for the area had recently been completed for Ontario North East Meats (ONE Meats). In October 2009, ONE Meats received support from the Town of Cochrane council for the project and approval to proceed with the environmental study on the site lands for the facility. Additional details on the abattoir project are presented in Chapter 4 of this report.

## Agri-Product Marketing and Promotion

Agri-sector stakeholders reported that there is potential for promoting greater collaboration with First Nations communities to make the region more self sufficient in meeting the food needs of local residents. It was suggested that the existing farmers' markets in the District represent a good start at marketing local agri-foods and products but more can be done to raise awareness about the variety of local production and make it more accessible to local consumers. It was suggested that local institutions like schools and hospitals as well as restaurants need to be examined more closely to determine if these organizations could/would incorporate more locally produced foods in their menus. Locally produced potatoes are currently being marketed through at least one grocery store in the District. There has also been some recent success in other parts of Ontario in bringing a greater variety of local foods back into grocery stores and these opportunities need to be explored in the Cochrane District context.

Agri-sector stakeholders noted that the establishment of a cold storage facility will be of crucial importance in ensuring that local producers can supply products beyond the period of the growing season. Although a considerable portion of agricultural production in the District takes place in the unincorporated municipalities, farmers believe that there is a role for the local incorporated municipalities to play in helping to develop the local food system infrastructure and enhancing access to locally produced foods such as supporting existing farmers' markets and on-farm retail stores.

## 9.0 Conclusions and Recommendations

The value of agricultural production in Cochrane District is substantial. In 2005, farmers in the District reported a total of \$11.2 million in gross farm receipts. With respect to jobs, the local agriculture sector directly supports about 155 on-farm jobs. It is important to note that the above job figure does not include all part-time positions. Indeed, the employment profile of the agriculture sector is undergoing a transformation as part of a long term provincial trend with farmers increasingly working more hours off the farm to supplement their farm income. Between 1995 and 2005, the proportion of Cochrane District farmers working off the farm increased from 39% to 56%. 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 Cochrane District 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, and its access to a regional market (northeastern Ontario).

Cochrane District reported over 75,000 acres of farmland from 184 farms in 2006. Historically, the District reported as much as 187,000 acres of farmland in 1961 which indicates the great potential for expanding local agriculture production. With respect to crop production, the climate and soil conditions in the District allow for the production of a variety of field crops including barley, wheat, oats, mixed grains, and hay crops. Approximately 28,437 acres or 38% of the total farmland base in the District was used for crop production in 2006. Of significant importance is the 54,161 acres of farmland that were reported in crop production in 1961 which suggests that there is enormous potential for expanding crop production in the region. Based on projections from climate change models, the growing season in the District is expected to gradually increase over the next 100 years which will result in further crop production opportunities for the region.

Cochrane District features a variety of farm types and sizes. Major farm production activities in the District include hay/fodder production, beef production, dairy production, and a range of other animal production activities including horses, sheep, goats, bison, and deer/elk. The average farm size in Cochrane District is 409 acres but there is considerable variation in farm sizes across the area with farms in the Timmins area tending to be smaller (e.g. less than 200 acres). Additionally, farms in the Timmins area have become progressively smaller in size over the last 10 years while farms in other parts of the District have become progressively larger.

Agriculture in Cochrane District has been greatly advanced and continues to benefit from research and other activities conducted by a number of northern Ontario

institutions and organizations including the Kapuskasing Experimental Farm, the New Liskeard Agricultural Research Station, and various farmer led organizations.

Another stakeholder group that plays an important role in supporting agriculture is the agri-related business community. 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 regional analysis of agri-related business activity in the combined areas of Thunder Bay District, Kenora District, Rainy River District and Cochrane District reveals that agriculture is making a significant contribution to the wider economy beyond the farm gate. Collectively, the 840 farms and the 270 agri-related businesses in this Study Area generate approximately \$140 million in agri-related sales consisting of \$62.1 million in direct sales (farm receipts) and \$77.9 million in indirect sales (agri-related business sales). The associated sales expenditure multiplier indicates that for every dollar of farm income there is an additional \$1.30 in business sales activity in the wider economy.

Additionally, the agriculture sector in this Study Area supports between 2,520 and 3,465 jobs consisting of 1,120 direct jobs (on farm jobs), 455 indirect jobs (agri-related business jobs) and between 945 and 1,890 induced jobs (jobs in government sectors). The associated employment multiplier indicates that for every job in the agriculture sector an additional 1.3 to 2.1 jobs are supported in the wider economy. The high range job multiplier is more closely linked to the Thunder Bay region given the concentration of dairy and other agriculture sectors in the region and the larger agri-related business base.

### ***Recommendations***

As outlined above, agriculture in Cochrane District and northwestern Ontario as a whole produces significant economic and social benefits. The agriculture sector also features a number of opportunities for further growth and development.

A common concern expressed by agri-sector stakeholders in northern Ontario is that government policies and programs are typically based on models of agri-food production that feature larger scale operations and southern Ontario market realities. More focus is needed on developing policies and programs that address the needs/challenges of farms operating in the more localized economies that characterize northern Ontario. For example, beef sector support programs in the Province of Quebec are often cited by local producers as important factors in maintaining a strong beef sector.

Northern Ontario also has unique crop production challenges linked to soil and climate conditions and previous government land improvement programs were an important factor in the development of more productive farms in the District. Furthermore,

historical data indicates that Cochrane District has a considerable farmland base that could potentially be brought back into production.

- 1. It is recommended that government officials work closely with agri-related stakeholders in northern Ontario to better understand local production and market realities in order to facilitate the development of more relevant and accessible policies and programs for the region. This includes the reintroduction of farmland improvement programs.***
- 2. It is recommended the local/provincial government officials work closely with their Quebec counterparts to examine options for adapting and introducing relevant agricultural support programs from the Quebec context to northern Ontario.***

Value added farm activities are increasing in northern Ontario. A recent example is the proposed abattoir in the Town of Cochrane which recently received approval to proceed with the environmental study on the site lands. This is coinciding with growing consumer interest in locally produced foods and local efforts to promote greater awareness and involvement in production activities aimed at the local market. Agri-sector stakeholders in Cochrane District see the potential growth for a variety of local value added products including specialty meat products and fresh vegetables. Value added farm activities are also capturing the attention of younger people who are considering entering agriculture. However, the infrastructure needed to support some of these activities is expensive (e.g. processing and cold storage facilities) and the government regulations that surround the establishment and operation of some facilities can be costly and complex.

- 3. It is recommended that producers and other interest groups examine the establishment of cooperatives as a way to facilitate the development of infrastructure such as processing and storage facilities.***

Producers in northern Ontario and Quebec continue to benefit from the research activities being undertaken at the Kapuskasing Experimental Farm. However, in order to enhance the ability of the Experimental Farm to respond to the needs of producers, producers in the region would like to be more directly engaged in determining the type of research to be conducted at the Experimental Farm.

While agri-sector stakeholders recognize that there are agri-biomass development opportunities in the District, development of this sector needs to be undertaken in a manner that is sensitive to current and potential food production activities in the region.

Although there appears to be some recent growth in organic production in northeastern Ontario including Cochrane District, the amount and type of production taking place is not well understood. Additionally, the non-timber forest products sector is seen as an emerging sector in northern Ontario but there is very limited information on the type and

quantity of products being harvested and the way in which the raw resources are being used in further product development.<sup>46</sup>

- 4. It is recommended that funding for the Kapuskasing Experimental Farm be continued to support the further growth and development of the agriculture industry in Cochrane District and northeastern Ontario. It is also recommended that the Experimental Farm engage more directly with producer organizations in the region when determining research priorities.**
- 5. It is recommended that existing and potential agri-food production activities in the region be given careful consideration when pursuing the development of agri-biomass development opportunities in the District.**
- 6. It is recommended that local stakeholders work in partnership to develop a more detailed profile of the organic and non-timber forest products sectors to better understand the type, amount and value of production associated with these activities. It is also recommended that local stakeholders work in partnership to identify and implement strategies to facilitate the growth of these sectors.**

Agri-sector stakeholders including producers, research institutions, and agri-related businesses believe it is important to work on the development of a local/community food system. This entails the creation of a formal food production and marketing strategy and action plan with the engagement of local government, food producers, processors, retailers, and consumer groups. It would also include the development of infrastructure related elements such as local storage capacity for food products, an efficient transportation and distribution system/network, and local food product promotions with the goal of enhancing the accessibility of locally produced foods in all food outlets including alternative food outlets (e.g. farm retail outlets, farmers' markets, food basket programs, etc.).

- 7. It is recommended that a funded position (e.g. local food development official/liaison/planner) be established to work with agri-related stakeholders and coordinate the development and implementation of a formal local food system action plan with goals and objectives.**
- 8. It is recommended that producers and other agri-sector stakeholders seek out opportunities to work collaboratively with First Nation communities to promote the further development of local food production initiatives and continued enhancement of consumer access to local foods.**

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<sup>46</sup> 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).

Many businesses in northern Ontario recognize the importance of agriculture to their bottom line and the well being of the wider economy. The agriculture sector is valued for being a relatively stable sector and farmers are viewed as good customers who support local businesses. However, agri-related businesses also recognize that farmers sometimes purchase their farm materials from outside the region (e.g. southern Ontario, Quebec). Farm operators believe there is greater need for dialogue with agri-related businesses to ensure that local business owners are aware of the needs and resource limitations faced by farmers. Farm operators also feel that there are opportunities for local businesses to enhance their marketing to the farming community by ensuring that product/service advertising and promotions are sufficiently differentiated for the agriculture sector. This is especially relevant for any internet based promotions as farmers are increasingly using the internet to search for products and services.

- 9. It is recommended that the Cochrane Federation of Agriculture conduct information sessions with local Chambers of Commerce and relevant industry sector organizations to increase awareness of the significant business that agriculture conducts and the opportunities for businesses to capture more of this activity.***

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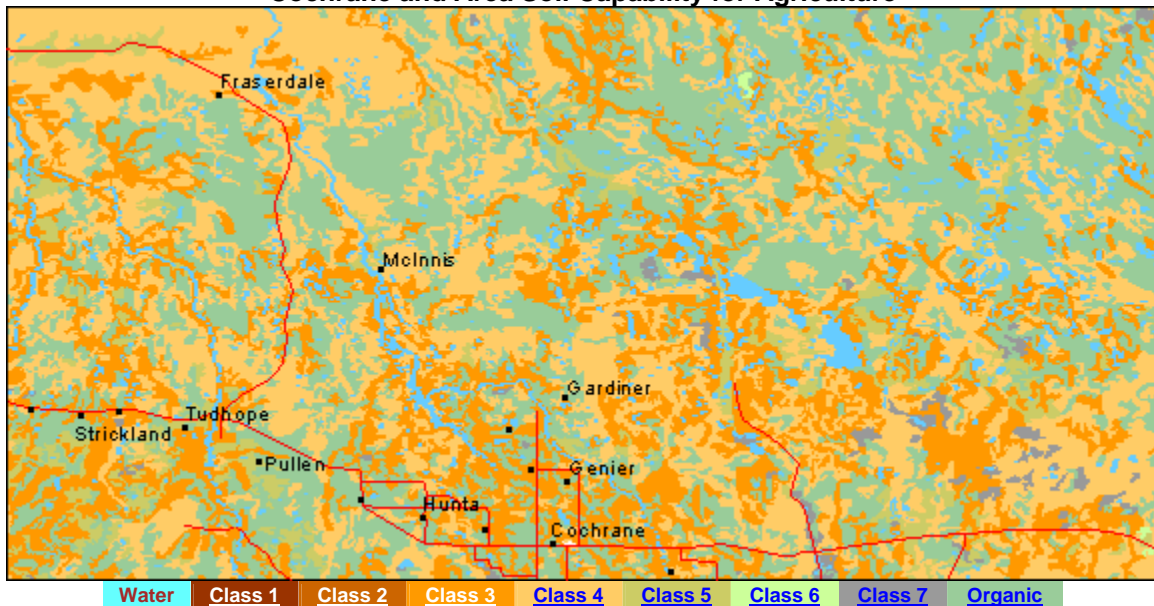
## Appendix A: Soil Capability for Agriculture in Cochrane District

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).

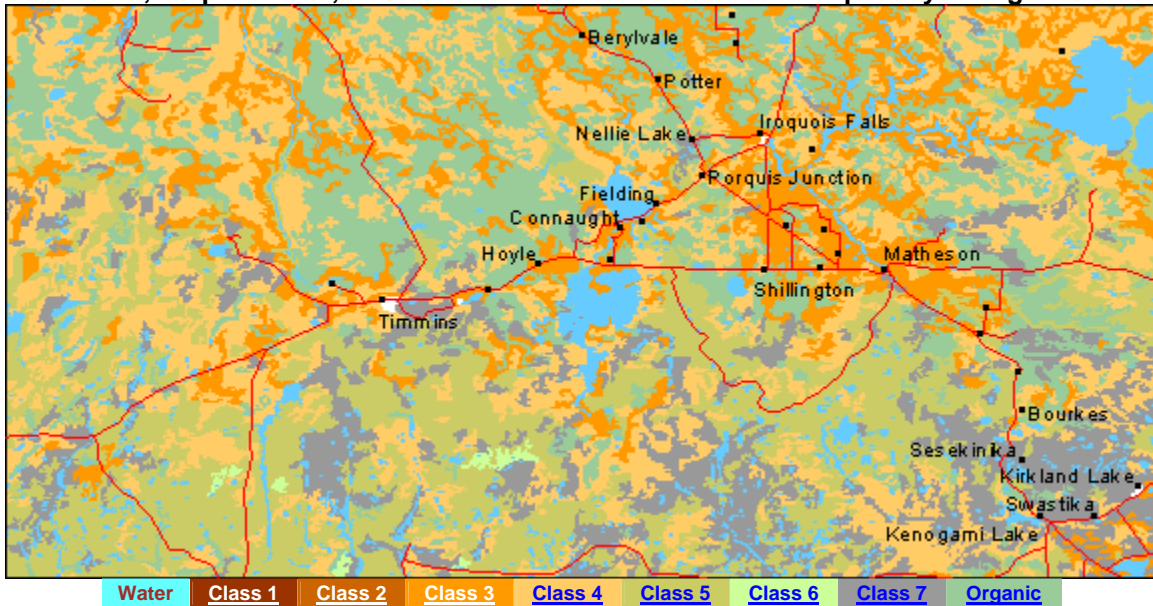
Source: Canada Land Inventory. Environment Canada

**Cochrane and Area Soil Capability for Agriculture**



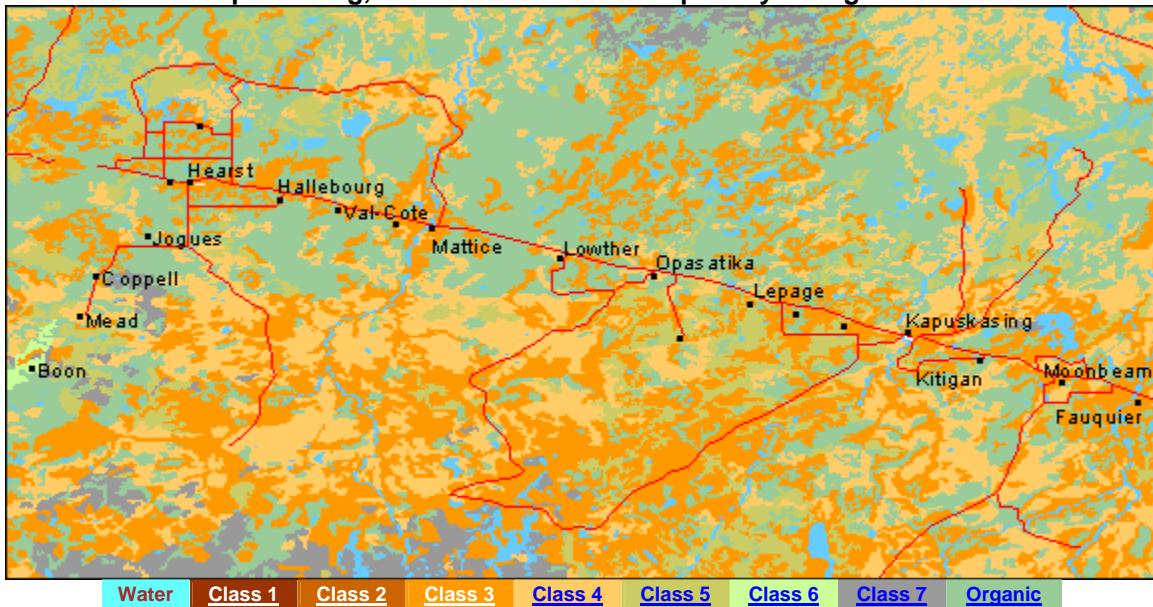
Source: Canada Land Inventory. Environment Canada.  
<http://geogratis.cgdi.gc.ca/CLI/frames.html>

**Timmins, Iroquois Falls, Black River-Matheson and Area Soil Capability for Agriculture**



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

**Kapuskasing, Hearst and Area Soil Capability for Agriculture**



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

## **Appendix B: 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). The multipliers calculated for this research include a sales expenditure multiplier and an employment multiplier.